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Wowza Streaming Cloud™

# User's Guide

This edition of the Wowza Streaming Cloud User's Guide is no longer maintained. It was last updated in February 2017.

The current user guide is available online at  
<https://www.wowza.com/docs/wowza-streaming-cloud-users-guide>.

# Wowza Streaming Cloud



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[www.wowza.com](http://www.wowza.com)

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## Introduction

The Wowza Streaming Cloud™ service lets you easily stream live video to any device, scaling automatically to accommodate audiences of any size, anywhere. Wowza Streaming Cloud accepts video from nearly any H.264 encoder or IP camera and transcodes the video in the cloud to create and deliver high-quality streams in multiple bitrates that can be played on virtually any device. You don't have to purchase or maintain hardware, or install or run software locally. You pay only for the resources you use, and broadcast to audiences large or small, any time.

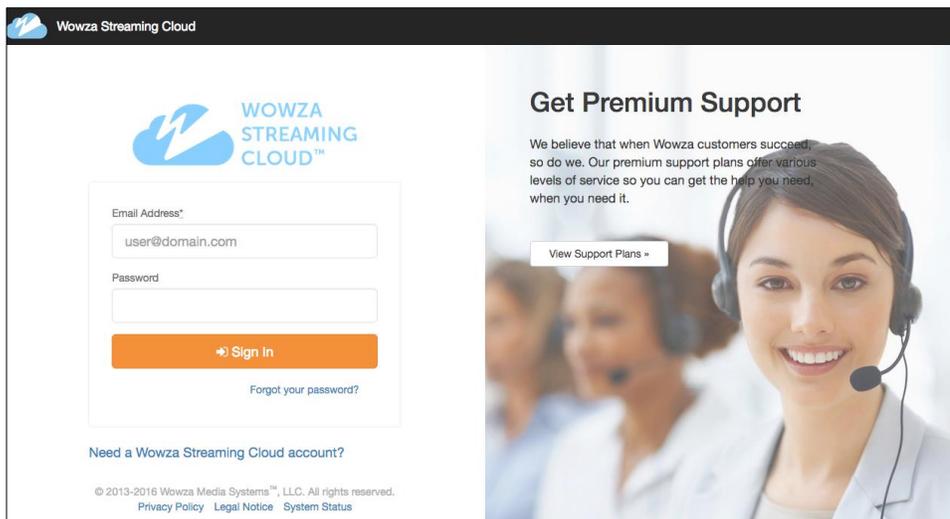
Using a simple, browser-based interface, tell Wowza Streaming Cloud what you're using to capture and encode your video and specify your playback options, then let Wowza Streaming Cloud do the rest of the work. Wowza Streaming Cloud provides you with the information you need to connect with your source encoder and for your viewers to watch the stream, and then it performs adaptive-bitrate transcoding on the stream by using the robust, reliable technology you've come to expect from Wowza.

In addition, advanced settings let you create custom transcoding workflows, receive live streams into selected Wowza Streaming Cloud content delivery network (CDN) sources, and deliver streams to multiple target destinations, offering the control and scalability required for large-scale, professional deployments. The capability to schedule and record streams provides additional flexibility and functionality for your streaming workflows.

## Sign in to Wowza Streaming Cloud

You can sign in to Wowza Streaming Cloud by using any modern web browser that supports HTML5 and Cascading Style Sheets level 3 (CSS 3). The Wowza Streaming Cloud web manager has been most extensively tested on Google Chrome, however, so for best results we recommend that you use the latest version of Google Chrome.

1. Do one of the following:
  - Click **Launch Wowza Streaming Cloud** on the purchase confirmation page after you complete checkout in the Wowza portal.
  - Navigate to [cloud.wowza.com](https://cloud.wowza.com).
2. Sign in using your Wowza credentials.

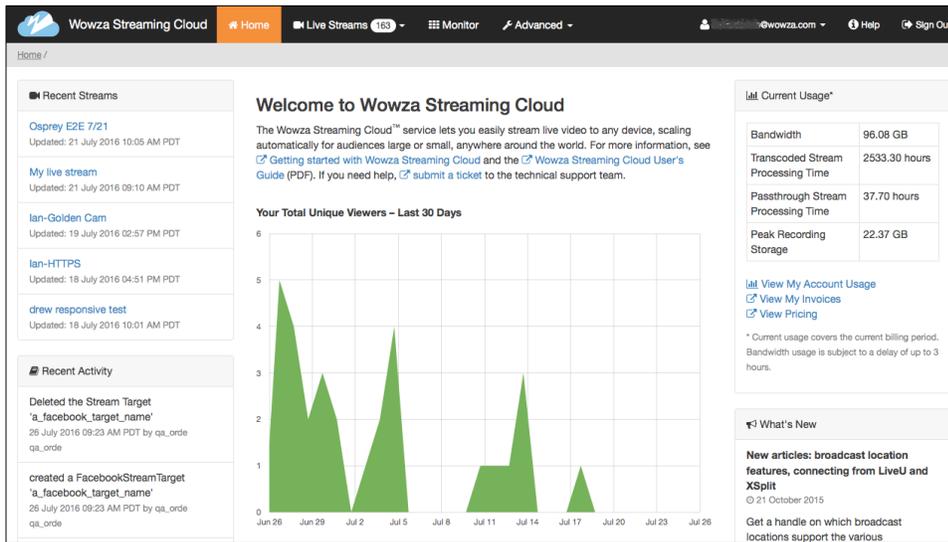


### Note

After five attempts to sign in to Wowza Streaming Cloud with bad credentials, you'll be prompted to prove you're not a robot.

3. If prompted, accept the Terms of Use by clicking **I accept**.

Welcome to Wowza Streaming Cloud.



The menu bar provides access to these Wowza Streaming Cloud features:

- **Home** – Provides links to useful documentation and displays graphs that depict recent traffic, network usage, and stream processing time. Panels on the left display **Recent Streams** and **Recent Activity**. Panels on the right show **Current Usage** data and **What's New** announcements.
- **Live Streams** – Lets you create, edit, start, stop, schedule, and record live streams.
- **Monitor** – Provides a quick view of the health of active streams.
- **Advanced** – Offers options to customize transcoding setups, receive video to Wowza Streaming Cloud stream sources, and deliver output renditions to multiple and custom stream targets. You can also view and manage recordings, schedules, and user activity logs.
- **Settings** (displays your Wowza account email address) – Lets you view usage information for the account, go to your account in the Wowza portal, switch to a different workgroup, or visit the Wowza website.
- **Help** – Provides links to documentation, articles, and Support resources.
- **Sign Out** – Exits the Wowza Streaming Cloud manager.

**Note**

The Wowza Streaming Cloud manager menu bar adjusts for mobile devices and as you resize your browser window. In smaller windows or screens, only the icons are visible.

# Creating and managing live streams

## About broadcasting live streams

A *live stream* is a single, linear video broadcast. You broadcast a live stream by receiving encoded source video into the Wowza Streaming Cloud service and letting Wowza Streaming Cloud transcode the stream and deliver it to viewers. Each live stream has a name and location, specifies how the video source connects with Wowza Streaming Cloud, and defines the playback method that allows viewers to watch the stream.

You create live streams and edit their settings on the **Live Streams** page of the Wowza Streaming Cloud manager. The graph on the **Live Streams** page, **Total Player Views – All Time**, shows traffic to all streams that were played on the Wowza Streaming Cloud player on both Wowza Streaming Cloud–hosted pages and external websites.

A list of all live streams appears in the **Live Streams** panel on the left side of the **Live Streams** page.

- A blue dot  by the stream name indicates the selected stream, which also appears in the **Selected Live Stream** panel and in the live stream detail page.
- A gray square  under the thumbnail indicates a stopped stream.
- A gray triangle  under the thumbnail indicates a started stream.

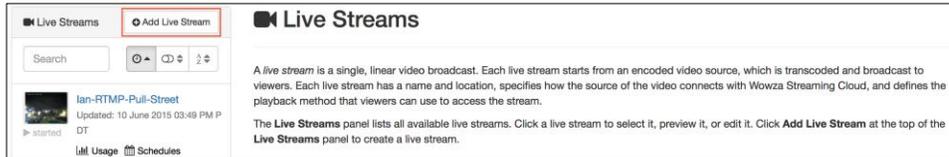
### Note

The same icons indicate selected, stopped, and started transcoders in the **Advanced** menu, too.

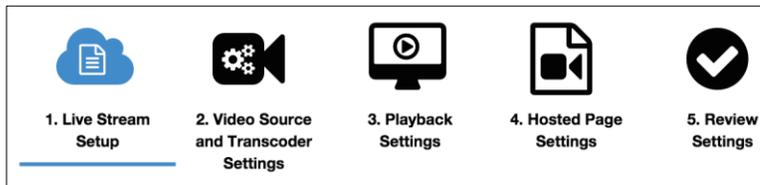
## Add a live stream

Create a live stream by completing a few easy steps.

1. Click **Live Streams** on the menu bar, and then click **Add Live Stream**.



2. On the **Live Stream Setup** page, provide basic information about your stream.



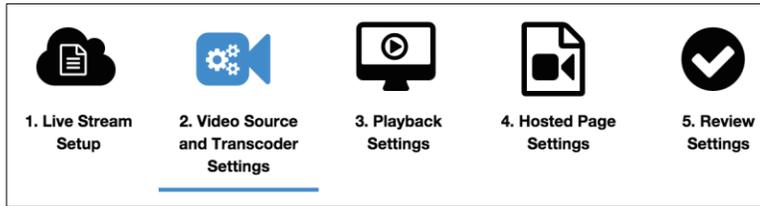
- **Live Stream Name** – A short, descriptive identifier for the stream that differentiates it from other streams. The **Live Stream Name** is required and can't be more than 200 characters in length. It doesn't have to be unique.
- **Broadcast Location** – The geographic region where Wowza Streaming Cloud transcodes and processes your live stream. Select a **Broadcast Location** that:
  - Is as close as possible to where your stream will originate,
  - Supports the billing mode you're using, pay as you go or 24x7, and
  - Supports 4K streaming (3840x2160 resolution), if you want to use it.

### Notes

- If your subscription plan covers passthrough streaming, choose a location that supports it.
- 24x7 streams can't be recorded.
- 4K streaming isn't available for 24x7 billing plans.

3. Click **Next**.

4. Provide **Video Source and Transcoder Settings**.



- **Camera / Encoder** – Choose one of the following sources:
  - **Wowza Streaming Engine™** – Wowza Streaming Engine can push streams Wowza Streaming Cloud to deliver streams through Wowza Streaming Cloud output targets.

When you choose Wowza Streaming Engine as your video source, specify how you want to use it with Wowza Streaming Cloud: To stream directly to a Wowza CDN target without performing transcoding in Wowza Streaming Cloud, select **Yes**. To send a stream to Wowza Streaming Cloud for transcoding and/or to deliver the source stream to multiple stream targets in Wowza Streaming Cloud, choose **No**. Streams that go directly to a Wowza CDN target without transcoding can't be recorded in Wowza Streaming Cloud. Also, you can't change the type of stream you send from Wowza Streaming Engine after the Wowza Streaming Cloud live stream is created.

- **Wowza GoCoder™** – A mobile encoding app for iOS and Android devices.
  - **Works with Wowza™ partner** – Choose a professional encoder or IP camera from a Works with Wowza partner, including Axis, NewTek, Sony, Telestream, or Teradek.
  - **IP Camera** – Any IP camera that supports RTSP and H.264.
  - **Other RTMP** – Any encoder that supports RTMP and H.264.
  - **Other RTSP** – Any encoder that supports RTSP and H.264.
- **Live Stream Type** – Live streams can be **Adaptive bitrate** or **Passthrough**. An **Adaptive bitrate** stream generates multiple renditions of the source video, at different bitrates. A **Passthrough** stream sends the source video directly to the hosted page or other target without performing transcoding.

If your subscription plan covers passthrough streaming, select whether you want to create a passthrough or adaptive bitrate live steam.

**Note**  
The **Live Stream Type** can't be changed after the live stream is created.

- **Billing Mode** – If your subscription plan covers 24x7 billing, choose whether you want to run the stream in **Pay as you go** or **24x7** mode.

### Notes

- 24x7 streams run until they are stopped either manually or by using a schedule. They do **not** automatically stop after the transcoder has been idle for 20 minutes.
  - 24x7 streams can't be recorded.
  - 24x7 streams don't support 4K resolution.
  - The **Billing Mode** can't be changed after the live stream is created.
- **Source Delivery Method** – For **Other RTMP** or **Other RTSP**, specify whether the encoder will **Push** the stream to Wowza Streaming Cloud or whether Wowza Streaming Cloud needs to **Pull** the stream to the transcoder.

For **Other RTMP** push streams, select **Push directly to Wowza Streaming Cloud** to send the stream directly to the transcoder at your **Broadcast Location**. If you experience problems with the direct connection to Wowza Streaming Cloud, select **Push to a stream source** to route the stream through a CDN endpoint that offers reduced latency between your video source and the transcoder.

- **Source URL** – For IP cameras, including IP cameras from Works with Wowza partners, and for RTMP and RTSP pull streams, enter the device's web address. Consult the device's documentation for the syntax of the stream address and enter it in the **Source URL** field.

### Note

By default, Wowza Streaming Cloud uses TCP port 1935 for RTMP streaming and TCP port 554 for RTSP streaming. If you don't use the default port, be sure to indicate that in the source URL.

- **Delivery Protocol** – Makes the live stream available to viewers by using Apple HLS, Apple HLS and Adobe HDS, or Apple HLS over HTTPS. Wowza Streaming Cloud generates playback URLs for one or both protocols depending on your selection. The **Delivery Protocol** can't be changed after the live stream is created.

- Low Latency** – If the **Delivery Protocol** is **Apple HLS**, you can create a low-latency stream. Low-latency streams use modified transcoder buffer settings and send smaller video packets to players from Wowza CDN – HLS stream targets. This can reduce latency to as little as 10 seconds, but it also creates additional network overhead. If the client doesn't have enough bandwidth, playback may stall. Also, playback may be affected on some older devices. Select **Yes, create a low-latency stream** only if your viewers experience unacceptably long latency while watching your live stream over Wowza CDN - HLS stream targets.

**Note**

The live stream **Low Latency** setting does *not* reduce latency on streams viewed on a Wowza Streaming Cloud hosted webpage.

- Aspect Ratio** – The aspect ratio and pixel dimensions, or frame size, of the source video. Choosing the correct aspect ratio and dimensions ensures that the video won't be distorted, squeezed, or cropped when it's played.

The higher the resolution of the incoming video, the more bitrate renditions Wowza Streaming Cloud generates. A *bitrate rendition* is a version of the live stream at a specific frame size and bitrate, such as 640x360 pixels at 1200Kbps. Wowza Streaming Cloud creates multiple bitrate renditions, based on the resolution of the source video, to offer the best possible playback experience given a viewer's device and bandwidth. The following tables show how many bitrate renditions Wowza Streaming Cloud generates.

**16:9**

Source Video Frame Size	Number of Bitrate Renditions
≤ 3840 x 2160	7
≤ 1920 x 1080	6
≤ 1280 x 720	5
≤ 848 x 480	4
≤ 640 x 360	3
≤ 512 x 288	No transcoding. One (1) output rendition.

**4:3**

Source Video Frame Size	Number of Bitrate Renditions
≤ 768 x 576	4
≤ 640 x 480	3
≤ 384 x 288	No transcoding. One (1) output rendition.

- **Recording** – If you want Wowza Streaming Cloud to create a recording of your live stream, select **Yes, record this live stream**.

**Note**

Recordings incur storage costs. See [Recording streams](#) for more information about recording streams and usage.

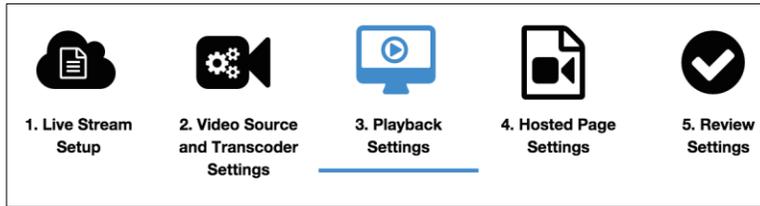
- **Closed Captions** – Wowza Streaming Cloud can receive closed caption data with your source stream so that captions appear when the stream is played using the Adobe HDS and Apple HLS protocols. Choose the type of caption your video source is sending to Wowza Streaming Cloud: **CEA-608 (digital)**, Action Message Format (AMF) **onTextData**, or **CEA-608 (digital) and onTextData**. To omit captions from playback, leave the closed captioning option set at **None**.

**Note**

Wowza Streaming Cloud supports only the digital CEA-608 portion of the CEA-708 closed captioning standard.

- **Source Security** – By default, Wowza Streaming Cloud secures **Wowza GoCoder**, **Other RTMP / Push directly to Wowza Streaming Cloud**, and **Other RTSP / Push Stream** connections by requiring a source username and password for authentication. Select **Disable authentication** if you don't want to use authentication with your video source connection.

5. Click **Next**.

6. Specify **Playback Settings**.

Playback settings are used by the player on your Wowza Streaming Cloud hosted webpage. If you use a different player or play streams in Safari using the Apple HLS playback URL, playback settings are disregarded.

- **Player** – You can choose from two players for your live stream.
  - **Original HTML5 player** – A HTML5-based player that falls back to playing Flash on older browsers that don't support HTML5 but do support Flash.
  - **Wowza Player** – Wowza™ Player is a lightweight HTML5 player that uses Apple HLS and plays streams on any browser, on any device.

#### Notes

- In order to choose **Wowza Player**, the **Delivery Protocol** must be **Apple HLS over HTTPS** and **Closed Captions** must be **None**. If necessary, click **Back** to set the **Delivery Protocol** and **Closed Captions** options on the **Video Source and Transcoder Settings** page.

- **Player Width** – The width of the player can be either fixed or variable. If you choose **Responsive**, the player's width adjusts for the device on which it's being viewed. If you choose **Fixed Width**, enter a width, in pixels. The height is calculated automatically based on the aspect ratio of the video source. The dimensions, whether fixed or responsive, are used in the player embed code.

#### Note

For a fixed-width player, we recommend a minimum width of 365 pixels. If you need a smaller player, use a responsive player instead of a fixed-width player.

- **Countdown Clock** – (Optional) If selected, a countdown clock appears in the player before the stream begins. If you include a countdown clock, provide the date and time zone of the event.

### Notes

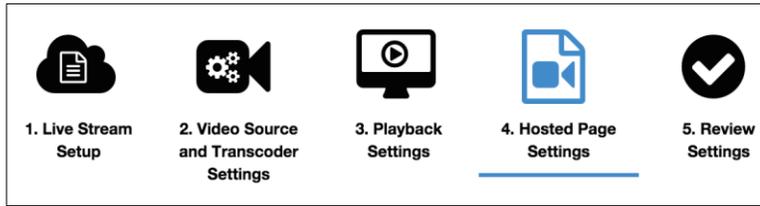
- With the original HTML5 player, if you display both a poster image and a countdown clock, the poster image appears behind the clock.
  - With the original HTML5 player, the countdown clock doesn't appear in the Flash fallback player.
- **Video Poster Image** – (Optional) Upload a poster image to appear in the player before the stream begins. To prevent distortion or cropping, make sure the image has the same aspect ratio as the source video. Poster images must be GIF, JPEG, or PNG format and no larger than 2.5 MB.
  - **Player Logo** – (Optional) A logo or other partially transparent image that appears in the player before and during playback. Upload a logo or other image file that's GIF, JPEG, or PNG format and no larger than 2.5 MB. Then, specify the corner of the player to which you want to anchor the logo.

### Note

With the original HTML5 player, the player logo doesn't appear in the Flash fallback player.

7. Click **Next**.

8. Specify **Hosted Page Settings**.



- **Wowza Streaming Cloud Hosted Page** – A webpage hosted by Wowza Streaming Cloud that includes the video player. Select **Yes** to have Wowza host a webpage for your live stream. Select **No** to manage video playback yourself.

If you don't use a hosted page, you can embed the player on your own webpage or use your own player. After you create the live stream, Wowza Streaming Cloud provides the embed code and playback URLs you need for those playback methods.

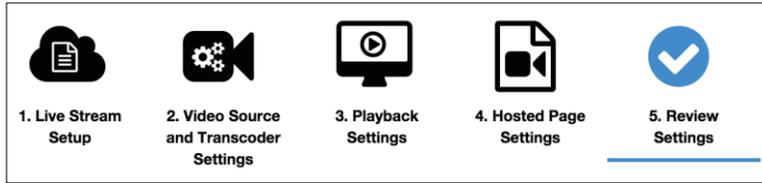
**Note**

If you choose to not have a hosted page when you create the live stream, you can't add one afterward.

- **Hosted Page Title** – A short, descriptive title that appears above the player. HTML, JavaScript, and other tags aren't allowed. If you leave the **Hosted Page Title** field empty, Wowza Streaming Cloud uses the **Live Stream Name** as the page title.
- **Hosted Page Logo** – (Optional) A graphical logo of your choosing that appears above the player. The logo file must be GIF, JPEG, or PNG format and no larger than 2.5 MB. Wowza Streaming Cloud resizes the image to fit the space on the page.
- **Hosted Page Description** – (Optional) A longer text description of the stream or event that appears below the player. HTML, JavaScript, and other tags aren't allowed.
- **Sharing Icons** – (Optional) Buttons that let viewers quickly share the link to the video on Facebook, Google+, Twitter, and by email. Sharing icons appear below the player and below the **Hosted Page Description**, if there is one.

9. Click **Next**.

10. Review your choices. If necessary, click **Back** or click the **Live Stream Setup**, **Video Source and Transcoder Settings**, **Playback Settings**, or **Hosted Page Settings** icon to edit your selections.



11. Click **Finish**.

Wowza Streaming Cloud creates the live stream and displays the **Overview** tab of the live stream detail page.

### My first stream Delete Live Stream

Status: stopped - Created on 28 September 2016 07:16 PM PDT by

[Start Live Stream](#)

Overview
Live Stream Setup
Video Source and Transcoder
Playback
Hosted Page

**Video Snapshot** Hide Help »

To connect your video source, you must start the live stream.

[Start your live stream now](#)

Not started

Inbound: Connected	--
Inbound Bitrate: Actual	--
Outbound Bitrate: Actual	--
Outbound Bitrate: Configured	6696.0 Kbps
CPU Usage	--
Frame Size	1280x720
Frame Rate	--
Keyframe Interval	--
Total Unique Viewers	--

**Connection Code**

008baf

Expires 03 November 2016 01:54 PM PDT

**Source Connection Information**

Primary Server	rtsp://192.168.1.100:1935/entrypoint.cloud.wowza.com/app-7686
Host Port	1935
Stream Name	e1fa96a0
Disable Authentication	No
Source Username	client1
Source Password	..... <input type="checkbox"/>

**Player Embed Code**

```

<div id='wowza_player'></div>
<script id='player_embed' src='//player-dev.cloud.wowza.com/qa/tgfpwb4c/wowza
                    
```

**Playback URLs**

Apple HLS:

http://192.168.1.100:1935/entrypoint.cloud.wowza.com/app-7686/entrypoint.cloud.wowza.com/app-7686-i.akamaihd.net/hls/Live/253446/85ff42fa/playlist.m3u8

**Live Stream Overview**

The **Video Snapshot** displays frames from the video when the stream is live. You can also see source, transcoder, and delivery information for the active stream.

The snapshot updates every 5 seconds. Source and transcoder information refresh every 10 seconds. **Total Unique Viewers** begins to update approximately 2 hours after the stream starts and then updates approximately hourly. It may take up to 48 hours after the stream ends for viewer data to finalize. A single unique viewer is one IP address receiving the stream on any player or device in a 24-hour period.

Details you need to configure your source to connect to Wowza Streaming Cloud appear below the **Video Snapshot**. Depending on your source, you'll see **Source Connection Information**, a **Connection Code**, a **Download** button, and/or a **Source URL**. Click the **Video Source and Transcoder** tab for more connection information or to change your source or transcoder settings.

If you're hosting your video on your own website, incorporate the **Player Embed Code** into your webpage.

If you're not using the Wowza Streaming Cloud player for your stream, use the **Playback URLs** to configure players that support Adobe HDS or Apple HLS streams.

## Start a live stream

1. Select the stream in the **Live Streams** panel of the **Live Streams** page.
2. Do one of the following:
  - Click **Start Live Stream** at the top of the live stream detail page.
  - Click **Start your live stream now** in the **Video Snapshot** area of the **Overview** tab.

Wowza Streaming Cloud asks you to confirm that you want to start the stream and then opens it and connects with your video source.

### Important

- After starting the live stream, make sure to start your video source, as well.
- It may take about a minute for the stream to connect and the preview to start.
- Charges begin to accrue as soon as you start your stream in Wowza Streaming Cloud, even if you haven't started your video source yet.

## Stop a live stream

1. Select the live stream in the **Live Streams** panel of the **Live Streams** page.
2. Click **Stop Live Stream** at the top of the live stream detail page.

### Important

Remember to stop your live stream when your event ends. Transcoding charges accrue for started live streams even if they aren't actively streaming content. Wowza Streaming Cloud automatically stops idle pay-as-you-go live streams after 20 minutes, but you should stop your stream as soon as your event ends to avoid accruing unnecessary charges. You can instruct Wowza Streaming Cloud to stop the transcoder for inactive pay-as-you-go streams sooner than 20 minutes by changing the **Idle Timeout** value on the **Transcoder Setup** page. See [Edit a transcoder's settings, outputs, or targets](#).

## View live stream details

1. Select a live stream in the **Live Streams** panel of the **Live Streams** page.
2. Click a tab on the live stream detail page to see relevant information.
  - The **Overview** tab shows:

**Video Snapshot** – The **Video Snapshot**, which appears only when a stream is active, displays:

- A frame from the live stream every five seconds.
- A date/timestamp indicating when the stream began.
- The video source frame size.
- The inbound connection status, which indicates whether the source is connected to the Wowza Streaming Cloud transcoder.

Real-time source stream, transcoder, and delivery details appear next to the video snapshot. See [Monitor an active stream](#) for information about source, transcoder, and delivery details.

The **Overview** tab also displays connection information, which varies depending on the video source you've chosen:

**Source Connection Information** – Details such as the Wowza Streaming Cloud primary server and host port, the stream name, and authentication information that you can use to manually configure and connect the video source to the live stream.

**Connection Code** – The **Connection Code** can be used to easily connect Wowza Streaming Engine, Wowza GoCoder, and some Works with Wowza partner video sources to Wowza Streaming Cloud. Each code can be used once and expires 24 hours after it's created. If the code is expired, click the **Video Source and Transcoder** tab to generate a new one.

**Source URL** – The web address of the IP camera or pull-connected RTMP/RTSP device specified as the video source for the live stream.

**Player Embed Code** – The HTML code that you can copy and paste into an external webpage to display your live stream on that page in your selected player.

**Playback URLs** – The addresses that can be used to configure playback of the stream using Adobe HDS and Apple HLS protocols.

### Notes

- For push streams, the **Stream Name** in the **Source Connection Information** table and the stream name used in Adobe HDS and Apple HLS playback URLs don't match. This is intentional and allows certain advanced custom transcoding workflows.
  - A **Live Stream Name** is different from a **Stream Name**. You create a **Live Stream Name** to identify the live event you're broadcasting in Wowza Streaming Cloud. A **Stream Name** is an element of a streaming URL, such as an Apple HLS playback URL or an RTMP connection URL. It's typically an alphanumeric string that's created automatically by an encoder or server.
  - Adobe HDS playback URLs work only with players that support the Akamai HDCore ActionScript Library. For more information, see the Support article [How to use Adobe HDS playback URLs in third-party players](#).
- The **Live Stream Setup** tab shows the **Live Stream Name** and **Broadcast Location**.
  - The **Video Source and Transcoder** tab shows the hardware or software that's providing the source video to Wowza Streaming Cloud, the information you need to use in the video source so it can connect with Wowza Streaming Cloud, and the aspect ratio, billing mode, recording, captioning, and other source details.
  - The **Playback** tab shows a preview of the player, a summary of player settings, the player embed code, and playback URLs.
  - The **Hosted Page** tab shows details about the Wowza Streaming Cloud hosted page, if you have one. Give the **Hosted Page URL** to viewers so they can watch your event.

## Edit a live stream's settings

1. Select the live stream in the **Live Streams** panel of the **Live Streams** page.
2. Do any of the following:
  - Click the **Live Stream Setup** tab and then click **Edit** to change the live stream name.

### Note

The live stream's **Broadcast Location** can only be edited on the **Setup** tab of the stream's transcoder detail page. See [Edit a transcoder's settings, outputs, or targets](#).

- Click the **Video Source and Transcoder** tab and then click **Edit** to change or reconfigure the camera, encoder, or connection you're using. You can also change the username and password used for GoCoder and RTMP and RTSP push authentication. Usernames and passwords can contain only upper and lowercase letters; numbers; and the period (.), underscore (\_), and hyphen (-) characters. No other special characters can be used.

### Note

The low-latency option can't be changed on the **Edit** tab of the **Video Source and Transcoder** page. Change the segment duration on the Wowza CDN - HLS stream target's detail page (see [Edit an HLS stream target's properties](#)). Adjust the incoming buffer size and turn on the sort packet buffer on the live stream's transcoder detail page (see [Edit a transcoder's settings, outputs, or targets](#)).

- Click the **Playback** tab and then click **Edit** to change Wowza Streaming Cloud player settings.
- Click the **Hosted Page** tab and then click **Edit** to change hosted page settings.

### Note

If you chose to not have a hosted page when you created the live stream, you can't add one afterward.

3. Click **Save**.

### Note

Some changes to the player take a few minutes to generate and require you to manually refresh the hosted player page in order to see them.

4. If you edited the settings of a live stream while it's running and you want the changes to take effect for the active stream, click **Reset Stream**.

## Delete a live stream

1. Select the live stream in the **Live Streams** panel of the **Live Streams** page.
2. Click **Delete Live Stream** in the upper-right corner of the live stream detail page.

### Notes

- You can't delete a live stream while it's running.
- If you delete a live stream that has schedules associated with it, the schedules are deleted, too.
- If you delete a live stream that has recordings associated with it, the recordings aren't deleted.

## Find and sort live streams

As your list of live streams grows, use the search and sort commands in the **Live Streams** panel of the **Live Streams** page to quickly find the stream you want to view or edit.

- Enter text in the **Search** field to see all live streams with names that include the search criteria.
- Change the order in which live streams are listed by clicking any of the following:
  - **Sort by Name**  – Lists live streams in alphabetical or reverse alphabetical order. By default, streams are listed in alphabetical order.
  - **Sort by State**  – Lists started live streams followed by stopped streams, or stopped streams followed by started streams.
  - **Sort by Date**  – Lists the most recently used streams first, or oldest first.

### Note

The search and sort commands are available for transcoders, stream sources, and stream targets in the **Advanced** menu, too, except you can't sort stream sources or stream targets by state.

## Configuring advanced transcoders

### About advanced transcoders

Live streams are an efficient way to receive, transcode, and deliver live adaptive bitrate content to a player. The Wowza Streaming Cloud service also offers an advanced mode that lets you customize transcoding processes. In the **Transcoder** section of the **Advanced** menu, you can create transcoders that are optimized for various network or streaming conditions, define custom adaptive bitrate output renditions and for transcoders, and specify RTMP targets, or destinations, for your output renditions.

Transcoders, like live streams, can be *adaptive bitrate* or *passthrough*. An adaptive bitrate transcoder generates multiple output renditions of your live stream, at different bitrates. You create the output renditions when you configure the transcoder's basic settings. A passthrough transcoder, in contrast, sends the source video directly to a stream target without performing transcoding. As a result, when you create a passthrough transcoder, you don't have the option to create custom output renditions, but you do need to assign one or more stream targets to it.

Passthrough transcoders, which can only be created if you have a subscription plan that supports them, accrue processing time, bandwidth, and egress usage, but much less than their adaptive bitrate counterparts.

## Add a transcoder

To create a custom transcoder, start by defining where and how the transcoder will receive and process the video stream.

1. Click **Advanced** on the menu bar, click **Transcoders**, and then click **Add Transcoder**.
2. On the **Add Transcoder: Transcoder Setup** page, specify setup details.
  - **Transcoder Name** – A short, descriptive identifier for the transcoder that differentiates it from other transcoders. The **Transcoder Name** is required and can't be more than 200 characters in length. It doesn't have to be unique.
  - **Transcoder Type** – If your subscription plan covers passthrough transcoding, choose **Adaptive bitrate** to transcode your source video and create multiple output renditions of your stream at different bitrates, or choose **Passthrough** to send the source video directly to a target without creating adaptive bitrate output renditions.

### Note

The **Transcoder Type** can't be changed after the transcoder is created.

- **Billing Mode** – If your subscription plan covers 24x7 billing, choose whether you want to run the transcoder in **Pay as you go** or **24x7** mode.

### Notes

- 24x7 transcoders run until they are stopped either manually or by using a schedule. They do **not** automatically stop after the transcoder has been idle for 20 minutes.
  - 24x7 transcoders can't be recorded.
  - 24x7 transcoders don't support 4K resolution.
  - The **Billing Mode** can't be changed after the transcoder is created.
- **Broadcast Location** – The geographic region where Wowza Streaming Cloud transcodes and processes your live stream. Select a **Broadcast Location** that's as close as possible to where your stream will originate.

- **Recording** – If you want Wowza Streaming Cloud to create a recording of your stream, select **Yes, record this transcoder**.

**Note**

Recordings incur storage costs. See [Recording streams](#) for more information about recording streams and usage.

- **Closed Captions** – Wowza Streaming Cloud can receive closed caption data with your source stream so that captions appear when the stream is played using the Adobe HDS and Apple HLS protocols. Choose the type of caption your video source is sending to Wowza Streaming Cloud: **CEA-608 (digital)**, Action Message Format (AMF) **onTextData**, or **CEA-608 (digital) and onTextData**. To omit captions from playback, leave the closed captioning option set at **None**.

**Note**

Wowza Streaming Cloud supports only the digital CEA-608 portion of the CEA-708 closed captioning standard.

- **Source Protocol** – The transport protocol for the source video:
  - **RTMP** – Adobe Real Time Messaging Protocol (RTMP) connections accept communications from sources such as Adobe Media Server. By default, RTMP-based connections require a source username and password to authenticate, and use TCP port 1935.
  - **RTSP** – Real Time Streaming Protocol (RTSP) connections are used to establish and control sessions between streaming sources. Data transmission is controlled by Real-time Transport Protocol (RTP) and Real Time Control Protocol (RTCP). RTSP connections don't support stream smoothing. By default, RTSP uses TCP port 554.
- **Source Delivery Method** – The type of connection:
  - **Pull from a source URL** – Instructs Wowza Streaming Cloud to pull the stream from an RTMP or RTSP source. Enter the server's web address in the **Source URL** field without the preceding protocol or trailing slash (/).
  - **Push to an existing stream source** – Lets you choose a stream source that you created in Wowza Streaming Cloud. For RTMP source types only.

- **Push to Wowza Streaming Cloud** – Indicates that your video source will push the stream to Wowza Streaming Cloud. For push connections, enter the optional **Source Stream Extension**. Some encoders automatically append an extension to their stream names. If the device you're using does this, enter the extension.
- **Buffer Size** – The incoming buffer stores packets before they're processed, enabling more efficient transcoding. An optimum **Buffer Size** reduces stream jittering and helps ensure successful transmuxing. (Transmuxing is the process of converting to a different container format without changing the stream's content.)
- **Low Latency** – Reduces the time it takes to decode and deliver video data to the player by turning off the sort packet buffer.
- **Stream Smoother** – A dynamic buffer that helps stabilize streams in rough network conditions but adds latency. For RTMP source types only.
- **Disable Stream Targets** – By default, stream targets start when the transcoder starts. Selecting **Disable stream targets on transcoder start**, however, keeps all stream targets disabled (not broadcasting) when you start the transcoder. If selected, you must manually start the targets on the **Outputs & Targets** tab of the transcoder detail page when you're ready for viewers to see the broadcast at your stream targets.
- **Idle Timeout** – Stops transcoders after no video has been received for the specified length of time. The default timeout is **1200** seconds, or 20 minutes, for pay-as-you-go transcoders and **0** seconds for 24x7 transcoders. When **Idle Timeout** is set to **0**, Wowza Streaming Cloud doesn't stop the transcoder.
- **Embed Watermark** – If desired, select **Embed a watermark in the transcoded stream**. Then, navigate to and select an image to embed as a watermark in your video stream. The watermark is encoded into all bitrate renditions of a transcoded stream. Watermark images must be GIF, JPEG, or PNG format and no larger than 2.5 MB.

After choosing the image, specify the corner of the video frame where the watermark should appear. To resize the image, enter a **Watermark Width** and **Watermark Height**. Then, specify the **Watermark Opacity** by entering a percentage between **0** (completely transparent) and **100** (opaque).

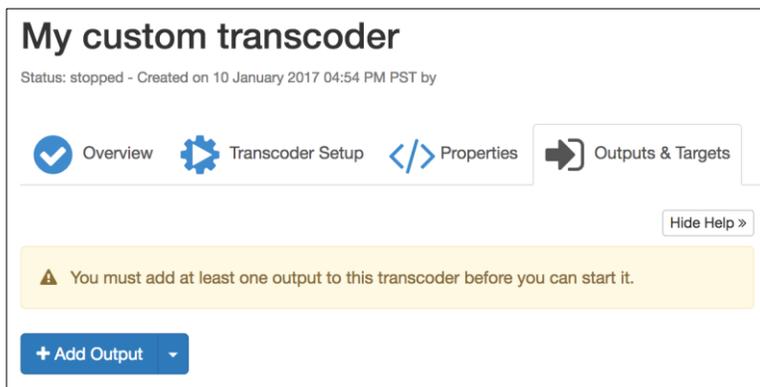
### Notes

- Watermarks aren't available for passthrough transcoders and don't appear on passthrough output renditions.
- Watermarks aren't embedded in Wowza Streaming Cloud recordings.

- **Source Security** – By default, Wowza Streaming Cloud secures RTMP and RTSP connections that push directly to Wowza Streaming Cloud by requiring username/password authentication. Select **Disable authentication** if you don't want to use authentication with your push source stream, or select **Change source username and password** to enter a different **Source Username** or **Source Password**. Usernames and passwords can contain only upper and lowercase letters; numbers; and the period (.), underscore (\_), and hyphen (-) characters. No other special characters can be used.
- **Description** – (Optional) Information for your reference.

3. Click **Add**.

Wowza Streaming Cloud creates the transcoder and displays the **Outputs & Targets** tab of the transcoder detail page.

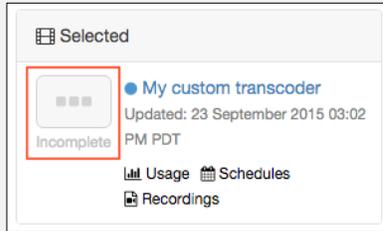


## Create output renditions for a transcoder

Each transcoder must have at least one *output rendition*. An *output rendition* is a version of the stream with a specific bitrate and aspect ratio.

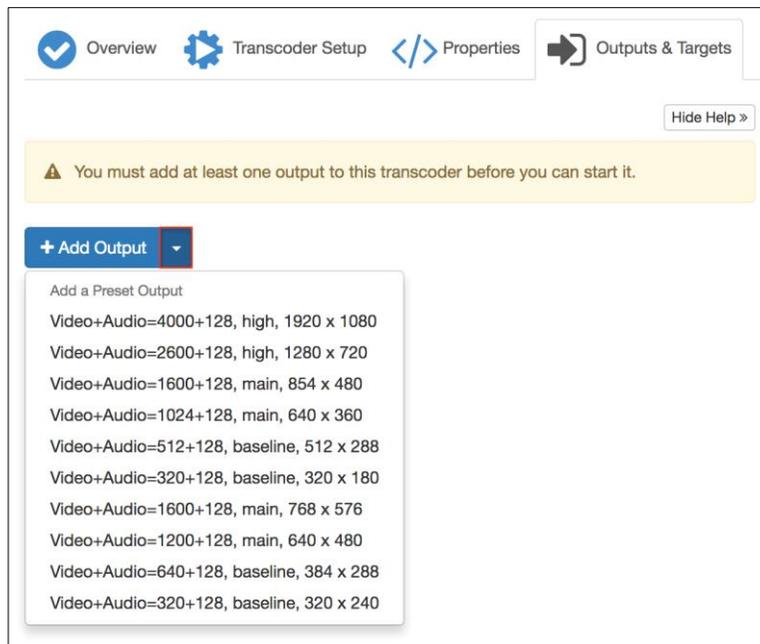
### Important

- You can't start a transcoder that doesn't have any outputs. Adaptive bitrate transcoders that don't have any outputs appear as **Incomplete** in the **Selected** and **Transcoders** panels.



- For passthrough transcoders, Wowza Streaming Cloud automatically creates an output rendition based on the source video's encoding settings. This passthrough output rendition can't be edited, and you can't create additional, custom outputs for passthrough transcoders. Passthrough transcoders that don't have any targets appear as **Incomplete** in the **Selected** and **Transcoders** panels.

- On the **Outputs & Targets** tab of the detail page of an adaptive bitrate transcoder, do one of the following:
  - Click the down arrow on the right side of the **Add Output** button and select a preset output rendition from the list. Skip Steps 2 and 3.



- Click the **Add Output** button to create a custom output rendition.
2. On the **Add an Output** form, specify the details of the rendition:
- **Stream Format** – Specifies whether the stream contains a video track, an audio track, or both.
  - **Passthrough Video** – Sends the stream to the target without transcoding the video track. If you select **Passthrough Video**, the **Video Bitrate** defaults to **0** and you can't specify **H.264 Profile**, **Aspect Ratio**, or **Keyframe Interval**.
  - **Passthrough Audio** – Sends the stream to the target without transcoding the audio track. If you select **Passthrough Audio**, **Audio Bitrate** defaults to **0**.
  - **Video Bitrate (Kbps)** – Specifies the video bitrate to use, in kilobits per second (Kbps). Must be between **0** Kbps (for passthrough video) and **10240** Kbps.
  - **Audio Bitrate (Kbps)** – Specifies the audio bitrate to use, in kilobits per second (Kbps). Must be at least **0** Kbps (for passthrough audio).
  - **H.264 Profile** – Specifies the use of industry-standard encoding methods that determine the quality and complexity of the stream. The profiles yield streams optimized for different applications.
    - **Baseline** – Best-suited for playback on mobile devices and for compatibility with older playback devices.
    - **Main** – Best-suited for standard-definition broadcast and desktop streaming, including Adobe Flash playback.
    - **High** – Designed for high-definition playback devices.
  - **Frame Rate Reduction** – Reduces the frame rate of the output rendition. By default, output renditions use the same frame rate as the encoded source video (**0 (no reduction)** is selected). Higher frame rates such as 50 fps or 60 fps yield smoother motion when the stream is viewed, but not all playback methods support high frame rates. To make high-frame-rate source video viewable over slower playback methods, you can skip one of every 2, 4, 25, 30, 50, or 60 frames on the output rendition. Choose **1/2**, for example, to reduce the frame rate on 60-fps source video to 30 fps on the output rendition or reduce the frame rate on 50-fps video to 25 fps on the output rendition.

- **Aspect Ratio** – Specifies the aspect ratio (16:9 or 4:3) and frame size of the output rendition. If you enter a custom aspect ratio, the width and height must each be at least **10** pixels.
- **Keyframe Interval** – Specifies the interval used to define the compression applied to a group of frames. The default value, **Follow Source**, uses the keyframe interval of the source video. You can also select a value of between **25** and **120** frames.

3. Click **Save**.

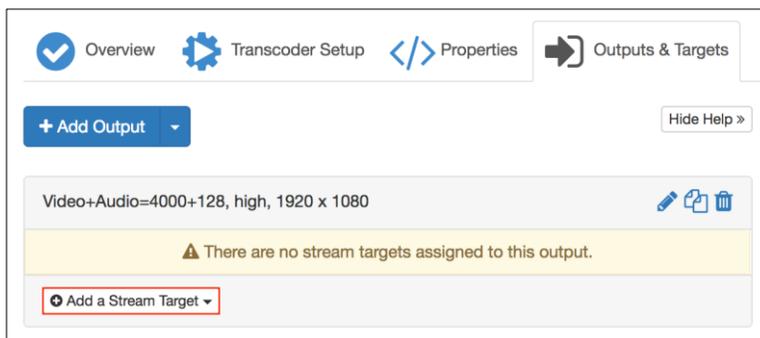
## Create stream targets for an output rendition

Each output rendition must have at least one *stream target*. A *stream target* is a destination for the rendition. Stream targets can be Wowza CDN resources or external destinations. After your transcoder has one or more output renditions assigned to it, create one or more stream targets for each output rendition.

### Note

You can't start a transcoder that doesn't have any stream targets.

1. On the **Outputs & Targets** tab of the transcoder detail page, click the **Add a Stream Target** button for any output rendition.



2. Choose one of the following:

- **Wowza CDN - HDS/HLS** – A target at a Wowza Streaming Cloud edge resource that receives the stream over RTMP and makes it available for playback over Adobe HDS and Apple HLS.
- **Wowza CDN - HLS** – A target at a Wowza Streaming Cloud location that receives and makes the stream available for playback over Apple HLS.
- **Custom** – A custom target at any RTMP destination.
- **Facebook Live** – A target that delivers the stream to a Facebook Timeline, Page, group, or event for Facebook Live Video playback.
- **Existing stream target** – Any existing Wowza Streaming Cloud target, Wowza CDN or custom. Uses the target as is; you can't edit it.

3. Depending on the type of stream target you're creating, do one of the following:

- **Wowza CDN - HDS/HLS** – Enter the **Target Name** and **Target Location** and click **Add**.
- **Wowza CDN - HLS** – Enter the **Target Name** and then click **Add**. For information about secure playback, secure ingest, and CORS compatibility, see the **Help** panel on the right side of the page or see [Add a Wowza CDN target for HLS playback](#).
- **Custom** – Enter the target settings and then click **Add**. For information about the options, see the **Help** panel on the right side of the page or see [Add a custom target](#).
- **Facebook Live** – Enter the target settings and then click **Add**. For information about the options, see the **Help** panel on the right side of the page or see [Add a Facebook Live target](#).
- **Existing stream target** – Select a stream target from the list, select the option to use the backup URL if desired, and then click **Assign Stream Target**.

## View transcoder details

1. Click **Advanced** on the menu bar, and then click **Transcoders**.
2. Select a transcoder in the **Transcoders** panel.

### Note

Transcoders that were created through the live stream workflow appear in the **Transcoders** panel as *Live stream name / Transcoder*.

3. Click a tab on the transcoder detail page to see relevant information.
  - The **Overview** tab displays:

**Video Snapshot** – The **Video Snapshot** appears when a transcoder is streaming. The video snapshot shows:

- A frame from the live stream every five seconds.
- A date/timestamp indicating when the stream began.
- The video source frame size.
- The inbound connection status.

Real-time source stream, transcoder, and delivery details appear next to the snapshot. See [Monitor an active stream](#) for information about stream details.

**Live Stream** – If a transcoder was created through the live stream workflow, the live stream is listed after the **Video Snapshot**. Click the live stream name to go its detail page.

**Broadcast Location** – The region where your stream is being transcoded.

**Source Protocol** – Indicates whether the transcoder is connected to the source using the RTMP or RTSP protocol.

**Outputs & Targets** – Shows high-level specifications of each defined output rendition and the target or targets to which the rendition is being delivered. When the transcoder is running, status icons indicate whether each target is disabled, waiting (not found), active, or there's an error.

- The **Transcoder Setup** tab displays ingest and transcoding details for the transcoder, including **Transcoder Name**, **Source Protocol**, **Source Delivery Method**, and other setup options.
- The **Properties** tab displays details of any advanced properties that can be configured. Properties are available for transcoders that connect to sources over RTSP. See [Edit a transcoder's RTSP connection properties](#) for more information.
- The **Outputs & Targets** tab lists all output renditions for the transcoder and the target or targets associated with each output. The **Outputs & Targets** tab also offers buttons to let you start or stop all targets independently of starting and stopping the transcoder.

## Edit a transcoder's settings, outputs, or targets

1. Click **Advanced** on the menu bar, and then click **Transcoders**.
2. Select a transcoder in the **Transcoders** panel.
3. Do any of the following:
  - To edit a transcoder's settings, click the **Transcoder Setup** tab and then click **Edit**.
  - To edit outputs, click the **Outputs & Targets** tab and then:
    - Click  to edit the output rendition.
    - Click  to copy the output rendition.
    - Click  to delete the output rendition.
  - To edit targets, click the **Outputs & Targets** tab and then:
    - Click the **Actions** menu for any target and choose **Enable this stream target** or **Disable this stream target**.
    - Click the **P**  or **B**  icon to switch between using the primary and backup URL. Or, click the **Actions** menu for any target and choose **Switch to backup URL** or **Switch to primary URL**.
    - Click the **Actions** menu and choose **Remove this stream target** to delete the target from the output.
    - Click the target name to edit the target's settings.
4. (Optional) If you edited a transcoder while it's running and you want the changes to take effect for the active stream, click **Reset Transcoder**.

## Edit a transcoder's RTSP connection properties

Wowza Streaming Cloud provides advanced properties that you can use to troubleshoot playback failures of transcoded streams from a camera connected to Wowza Streaming Cloud over RTSP.

By default, these protocol properties are disabled and, unless otherwise noted, the default value for each setting is the Wowza Streaming Cloud system default.

### Important

Edit these settings with caution. For most RTSP source connections, none of these settings needs to be enabled or changed. Edit them only if your viewers experience failed playback of streams that are produced by cameras connected to Wowza Streaming Cloud via RTSP, transcoded, and sent to Akamai for CDN delivery.

1. Click **Advanced** on the menu bar, and then click **Transcoders**.
2. Select an RTSP transcoder in the **Transcoders** panel.
3. Click the **Properties** tab and then click **Edit**.
4. Select **Enabled** for any property and then specify the value you want to use for it.
  - **Set AV Sync to rtptimecode** – Specifies an alternate method for synchronizing the audio and video in the RTSP/RTP source stream. Set to **True** to specify that Wowza Streaming Cloud should use timecodes in the RTP stream packets to synchronize the audio and video. If set to **False** (the default), Wowza Streaming Cloud uses Sender Report (SR) packets in the stream for synchronization information. See also [RTP Timeout](#).
  - **Advanced Logging** – Logs extra debug information about the RTSP handshake between Wowza Streaming Cloud and the RTSP/RTP source stream. Set to **True** to create advanced logs. The default, **False**, generates less-detailed logs.
  - **RTP Timeout** – Specifies how long, in milliseconds, Wowza Streaming Cloud will wait for Sender Report (SR) packets in the RTSP/RTP source stream to arrive. SR packets provide timing information that enables the synchronization of audio and video in the stream. If SR packets don't arrive within the specified timeout period, Wowza Streaming Cloud uses the **Set AV Sync to rtptimecode** setting, if enabled, to synchronize the audio and video. Valid values range from **2000** (the default) to **30000**. See also [Set AV Sync to rtptimecode](#).
  - **Ignore Profile Level ID** – Attempts to derive the H.264 profile level ID from the sprop parameter data sets in the stream's Session Description Protocol (SDP) message. The ID allows a decoder to recognize the requirements to decode the stream, but many RTSP

sources, especially IP cameras, publish an incorrect ID in the SDP message. Set to **True** to tell Wowza Streaming Cloud to ignore the profile level ID in the sprop parameter data sets of the stream's SDP message when decoding the stream. The default, **False**, uses the ID in the decoding process.

- **Ignore SProp Parameter Sets** – Attempts to derive the H.264 profile level ID from SPS/PPS NAL units in the stream, if they exist. If the stream's SDP message contains incorrect sprop parameter data sets, try setting this value to **True** to derive the H.264 profile level ID from the SPS/PPS NAL units in the stream, instead. The default, **False**, instructs Wowza Streaming Cloud to attempt to derive the H.264 profile ID from sprop parameter sets.

### Note

Streams from many sources won't work when sprop parameter sets are ignored (when this setting is enabled and the value is **True**).

- **Transport Mode** – Specifies the transport mode used to pull an RTSP/RTP stream from an IP camera. By default, Wowza Streaming Cloud uses **Interleave** (RTP over TCP). You can change the transport mode to another protocol supported by your camera, such as **UDP** (TCP/UDP).
- **Filter Unknown Tracks** – If **True**, removes unidentifiable tracks from the RSTP/RTP source stream. The default, **False**, leaves unidentifiable tracks in the stream.
- **Validation Frequency** – Specifies, in milliseconds, how often Wowza Streaming Cloud validates the RTSP/RTP connection. Specify **0** to turn off validation. The default is **2000**.

5. Click **Save**.

## Copy or delete a transcoder

You can only copy or delete transcoders created through the **Advanced** menu, not transcoders created through the live stream workflow.

1. Select the transcoder in the **Transcoders** panel of the **Transcoders** page.
2. Do either of the following:
  - Click **Copy** in the upper-right corner of the transcoder detail page to make a new transcoder based on the current transcoder's settings.
  - Click **Delete** in the upper-right corner of the transcoder detail page to remove the transcoder from Wowza Streaming Cloud.

### Notes

- You can't delete a transcoder while it's running.
- If you delete a transcoder that has schedules associated with it, Wowza Streaming Cloud deletes the schedules, too.
- If you delete a transcoder that has recordings associated with it, the recordings aren't deleted.

## Start a transcoder

1. Select the transcoder in the **Transcoders** panel of the **Transcoders** page.
2. Do either of the following:
  - Click **Start Transcoder** at the top of the transcoder detail page.
  - Click **Start your transcoder now** in the **Video Snapshot** area of the **Overview** tab.

Wowza Streaming Cloud asks you to confirm that you want to start the transcoder and then starts it and connects with your source.

### **Important**

After starting the transcoder, make sure to start your video source, as well.

When you start a transcoder that was created through the live stream workflow, the live stream detail page updates to show the stream's started state.

## Stop a transcoder

1. Select the transcoder in the **Transcoders** panel of the **Transcoders** page.
2. Click **Stop Transcoder** at the top of the transcoder detail page.

When you stop a transcoder that was created through the live stream workflow, the stream detail page updates to show the stream's stopped state.

### **Important**

Remember to stop your transcoder when you're not streaming. Charges accrue for started transcoders even if they aren't streaming content. By default, Wowza Streaming Cloud stops idle pay-as-you-go transcoders after 20 minutes, but you can change the **Idle Timeout** value by editing the **Transcoder Setup**.

## Start or stop a transcoder's stream targets

There may be occasions when you want to start your transcoder but you're not ready to begin your broadcast. For example, you're preparing to stream a live event and you want to test your setup, or get the transcoder up and running 15 minutes or so before the event begins. You may not want viewers to see the stream, though, until the event actually starts. In those cases, you can start (or stop) your stream targets independently of starting (or stopping) the transcoder.

1. Select the transcoder in the **Transcoders** panel of the **Transcoders** page.
2. Click the **Output & Targets** tab of the transcoder detail page.
3. Click **Enable All Targets** or **Disable All Targets**.

## Working with stream sources

### About stream sources

With Wowza Streaming Cloud you can add an RTMP-based *stream source* to a transcoder, creating a layer of redundancy that's important for mission-critical streaming workflows. A stream source is a Wowza Streaming Cloud edge resource. If one source stream fails, Wowza Streaming Cloud continues to receive and process the source video on the additional, backup stream source, ensuring that playback continues uninterrupted for your viewers. In addition, when you use multiple stream sources you can restart one of your transcoders while your stream continues to run on the other, again without disruption to viewers.

### Add a stream source

#### Note

You can add up to 10 stream sources in a three-hour period.

1. Click **Advanced** on the menu bar, and then click **Stream Sources**.
2. Click **Add Source**.

3. Specify the following:

### Add Stream Source

[Hide Help »](#)

**Stream Source Name\***

Enter a name for this stream source

**Where do you want the stream source to be located?**

Choose a region in Wowza Streaming Cloud  
 Create a location based on my source encoder's IP address

**Stream Source Location\***

US West (California)
▼

Cancel
+ Add

- **Stream Source Name** – A short, descriptive identifier for the stream source that differentiates it from other stream sources. The **Stream Source Name** is required but doesn't have to be unique, and it can't be longer than 255 characters.
- **Stream Source Location** – The location where you want Wowza Streaming Cloud to transcode your stream. The **Stream Source Location** should be the geographic region where you're capturing the video.

**Note**

You can't change the **Source Stream Location** after the stream source is created.

Wowza Streaming Cloud can create the stream source at one of its own regional transcoding centers or at a location based on your encoder's IP address.

Using a stream source at a regional Wowza Streaming Cloud location sends the stream directly to the transcoder. Select **Choose a region in Wowza Streaming Cloud** and then use the **Stream Source Location** menu to select the region where you're capturing your stream.

Creating a stream source based on your encoder’s IP address routes the stream through a CDN endpoint that offers reduced latency between your video source and the Wowza Streaming Cloud transcoder. If you experience problems with the direct connection to Wowza Streaming Cloud or if you want to create a backup source stream or transcoder, choose **Create a location based on my source encoder’s IP address**. Then, enter the encoder’s **Primary IP Address** and, if you have one, its **Backup IP Address**. IP addresses must be pingable. If you don’t specify a **Backup IP Address**, Wowza Streaming Cloud uses the **Primary IP Address** as the backup IP address.

4. Click **Add**.

## View source details

1. Click **Advanced** on the menu bar, and then click **Stream Sources**.
2. Select a source in the **Stream Sources** panel.

### Note

Stream sources that were created through the live stream workflow appear in the **Stream Sources** panel as *Live stream name / Stream Source*.

**My new source**
Delete Stream Source

Edit
Hide Help >

**Stream Source Name**  
My new source

**Provider**  
Akamai RTMP->RTMP

**Source Location**  
US West (Oregon)

**IP Address**  
54.194.99.100

**Backup IP Address**  
54.194.99.100

**Stream Name**  
3f4fb167@151549

**Source Username**  
319499

**Source Password**  
.....

**Primary URL**  
rtmp://p.194.99.100.akamaiendpoint.net/EntryPoint

**Backup URL**  
rtmp://b.194.99.100.akamaiendpoint.net/EntryPoint

**Playback URL**  
rtmp://cp319499.live.edgefcs.net/live/51a89ff1@393871

**Transcoders Using This Stream Source**

**Stream Source Details**

Use the **Stream Name**, **Source Username** and **Source Password**, **Primary URL**, and **Backup URL** to configure your camera, encoder, or mobile device so that Wowza Streaming Cloud can pull the video source stream to the transcoder.

The **Transcoders Using This Stream Source** field indicates which transcoders are configured to use this stream source. To add or change which transcoders use this source, click **Advanced** on the menu bar, choose **Transcoders**, and then add or edit a transcoder.

Click **Edit** to change the **Stream Source Name**. Other settings can't be changed because they are provisioned and auto-generated by Wowza Streaming Cloud.

The stream source detail page displays the **Stream Source Name** and **Provider**. The **Provider** field shows that Wowza Streaming Cloud uses an Akamai RTMP source.

The location details that are displayed depend on whether your stream source is located in a Wowza Streaming Cloud region or in a location based on your source encoder's IP address. Use the **IP Address**, **Stream Name**, **Source Username**, **Source Password**, **Primary URL**, and other values to configure your video source to communicate with Wowza Streaming Cloud.

**Transcoders Using This Stream Source** indicates which transcoders are configured to use this source. If the transcoder was created through the live stream workflow, **(Live Stream)** appears after the transcoder name. Click a transcoder name to view or edit it. To add a transcoder or change which transcoders use this source, add or edit a transcoder. See [Add a transcoder](#) or [Edit a transcoder's settings, outputs, or targets](#).

## Edit a stream source

Because stream sources are managed by Wowza Streaming Cloud, you can't change the location or any other settings after the source is created except, however, the source name.

1. Click **Advanced** on the menu bar, and then click **Stream Sources**.
2. Select a source in the **Stream Sources** panel and then click **Edit**.
3. Enter a new name for the source, and then click **Save**.

## Delete a stream source

You can only delete a source if it's not associated with a transcoder or a live stream.

1. Click **Advanced** on the menu bar, and then click **Stream Sources**.
2. Select a source in the **Stream Sources** panel and then click **Delete Stream Source** in the upper-right corner of the stream source detail page.

## Working with stream targets

### About stream targets

A *stream target* is a destination for a stream. Stream targets can be Wowza Streaming Cloud edge resources or custom, external destinations. Stream targets let you create more flexible, scalable streaming workflows. For example, you can use Wowza Streaming Cloud to transcode source video into adaptive bitrate output renditions, and then have an external CDN such as Limelight Networks deliver the stream rather than have Wowza Streaming Cloud deliver the content to viewers. Or, send source video from your encoder directly to a Wowza CDN target, bypassing the Wowza Streaming Cloud transcoder but using the Wowza CDN target to deliver the content. Or, broadcast a stream to Facebook with a Facebook Live target.

#### Note

You can add up to 10 stream targets in a three-hour period.

### Add a Wowza CDN target for HDS/HLS playback

A Wowza CDN target for HDS/HLS playback receives the stream over RTMP at a Wowza CDN resource and makes it available for playback over Adobe HDS and Apple HLS. This type of target offers higher latency than a Wowza CDN HLS target but the broadest compatibility with players and devices.

1. Click **Advanced** on the menu bar, and then click **Stream Targets**.
2. Click **Add Target**, select **Wowza CDN - HDS/HLS**, and then click **Add**.

3. Specify the following:
  - **Target Name** – The **Target Name** is required but doesn't have to be unique, and it can't be longer than 255 characters.
  - **Target Location** – The geographic region where you're capturing the video that Wowza Streaming Cloud will transcode and deliver.

**Note**

The **Target Location** can't be changed after the target is created.

4. Click **Add**.

Wowza Streaming Cloud generates a target and displays the target detail page, which shows the target's **Adobe HDS Playback URL** and **Apple HLS Playback URL**.

## Add a Wowza CDN target for HLS playback

A Wowza CDN target for HLS playback receives and delivers the stream through a Wowza CDN resource over Apple HLS. This type of target has lower latency than a Wowza CDN HDS/HLS target and allows playback over iOS, Android, smart TVs, and HTML5-based players.

1. Click **Advanced** on the menu bar, and then click **Stream Targets**.
2. Click **Add Target**, select **Wowza CDN - HLS**, and then click **Add**.
3. Specify the **Target Name**.

The **Target Name** is required but doesn't have to be unique, and it can't be longer than 255 characters.

4. (Optional) Select **Yes, play over HTTPS** to have Wowza Streaming Cloud generate an HTTPS playback URL instead of an HTTP playback URL for the target. You can't change the SSL option after the target is created.
5. (Optional) Select **Yes, ingest the stream securely** to securely send the stream from the Wowza Streaming Cloud transcoder to the Wowza CDN target. If selected, Wowza Streaming Cloud generates a key that secures the stream between the transcoder and the target.

6. (Optional) To send the stream to a grid-delivery provider, select **Yes, enable CORS** (cross origin resource sharing). CORS streams are compatible with providers such as Peer5, Viblast, and Streamroot, which implement a decentralized, peer-to-peer transport layer to manage and optimize globally distributed, high-capacity streaming. You can't change the CORS delivery option after the target is created. Viewer data in Wowza Streaming Cloud doesn't reflect viewership at grid-delivery destinations.
7. Click **Add**.

Wowza Streaming Cloud generates a target and displays the target detail page, which shows the target's **Apple HLS Playback URL**.

## Add a custom target

Wowza Streaming Cloud can use the RTMP protocol to deliver streams to custom targets. The custom target can be a third-party CDN such as Akamai or Limelight Networks, or any RTMP destination or host, such as YouTube.

### Note

Look for the information you need to create a custom target in the ingestion settings provided by the target's software or documentation.

1. Click **Advanced** on the menu bar, and then click **Stream Targets**.
2. Click **Add Target**, select **Custom**, and then click **Add**.
3. On the **Create a custom target** page, specify the following:
  - **Target Name** – A short, descriptive identifier for the target that differentiates it from other targets in Wowza Streaming Cloud. A **Target Name** is required, doesn't have to be unique, and can't exceed 255 characters.
  - **Provider** – If the third-party CDN that you're using is listed, choose it from the pop-up menu. Otherwise, choose **RTMP**.
  - **Secure Playback** – (Optional) If your provider is **Akamai HLS Push**, you can select **Yes, play over HTTPS** to secure the stream target by using HTTPS for playback. If selected, Wowza Streaming Cloud generates an HTTPS playback URL for the target instead of an HTTP playback URL. You can't change the SSL option after the target is created.

- **Primary URL** – The RTMP address, without the preceding protocol and without a trailing slash (/), that the target uses to ingest a stream. For example, `[target-domain-or-ip-address]/[EntryPoint]`. For help determining the correct RTMP URL, see the destination's help or user guide.
- **Backup URL** – (Optional) The backup RTMP address, without the preceding protocol and without a trailing slash (/), that the target uses to ingest a stream.
- **Stream Name** – The name of the stream as defined in your target's ingestion settings.

### Note

When adding a custom Akamai target, the **Stream Name** must be in the format `[stream_name]_[angle]_[bitrate]@[stream_id]`, for example, `akamaistream_1_[bitrate]@12345`. For help determining the **Stream Name** for other custom targets, see the target provider's documentation.

- **Target Username** – Your username for RTMP authentication by the target.
- **Target Password** – Your password for RTMP authentication by the target.
- **Adobe HDS Playback URL** – (Optional) The web address that your target uses to playback Adobe HDS streams. You can include it here for informational purposes.
- **Apple HLS Playback URL** – (Optional) The web address that your target uses to playback Apple HLS streams. You can include it here for informational purposes.
- **RTMP Playback URL** – (Optional) The web address that your target uses to play RTMP streams. You can include it here for informational purposes.

#### 4. Click **Add**.

Wowza Streaming Cloud generates the target and displays the target detail page, which shows all of the specified playback URLs.

## Add a Facebook Live target

Wowza Streaming Cloud can send streams to Facebook to be broadcast with the Facebook Live Video publishing tool.

1. Click **Advanced** on the menu bar, and then click **Stream Targets**.
2. Click **Add Target**, select **Facebook Live**, and then click **Add**.
3. On the **Create a Facebook Live target** page, specify the following:
  - **Target Name** – A short, descriptive identifier for the target that differentiates it from other targets in Wowza Streaming Cloud. A **Target Name** is required, doesn't have to be unique, and can't exceed 255 characters.
  - **Video Destination** – The location where you want to post the stream on Facebook. Choose your Timeline, a Page you manage, a group you belong to, or an event that you're hosting.

### Notes

- The **Video Destination** can't be changed after the target is created.
  - You must have the appropriate permission on Facebook to post to a Page, group, or event. If the destination you want isn't in the menu, check the permissions for your Facebook account and Wowza Streaming Cloud app.
- 
- **Title** – A title to appear with the stream on Facebook. It must be a UTF-8 string and can be up to 255 characters. Emojis are *not* supported.
  - **Description** – A description to appear with the stream on Facebook. It must be a UTF-8 string. Emojis are *not* supported.
  - **Privacy** – If you're streaming to a Timeline, you can specify the Facebook privacy setting that determines who can watch your stream on Facebook: just you (**Only me**), **Friends**, **Friends of Friends**, or all Facebook users (**Public**).
  - **Stream continuously to Facebook** – Enables Facebook's continuous live video streaming mode. Select **Stream continuously to Facebook** if your broadcast will be longer than 90 minutes.
4. Click **Add**.

Wowza Streaming Cloud generates the target and displays the target detail page, which includes details about when the target expires.

Most Facebook Live targets expire 60 days from when you authorized your Facebook account to connect to the target. If the target has expired or become invalid, renew it by editing the target and saving your changes.

## View target details

1. Click **Advanced** on the menu bar, and then click **Stream Targets**.
2. Select a target in the **Stream Targets** panel.

### Note

Targets that were created through the live stream workflow appear in the **Stream Targets** panel as *Live stream name / Stream Target*.

- The **Setup** tab of all target detail pages displays the details you need to configure Wowza Streaming Cloud to connect to the target and to play the stream from the target. The details that appear depend on the type of target you're viewing.

A **Connection Code** appears if the target uses a video source, such as Wowza Streaming Engine, that's passing a stream or group of transcoded, adaptive bitrate streams through Wowza Streaming Cloud to the target. The **Connection Code** can be used by the encoder when you configure it to send the video source to Wowza Streaming Cloud.

Facebook Live stream targets display a target expiration date. Most Facebook Live targets expire 60 days from when you authorized your Facebook account to connect to the target. If the target expires or becomes invalid, renew it by editing the target and saving your changes.

**Transcoders Using This Target** indicates which transcoders are configured to use this target. If the transcoder was created through the live stream workflow, **(Live Stream)** appears after the transcoder name. Click a transcoder name to view or edit it. To add a transcoder or change which transcoders use this target, add or edit a transcoder. See [Add a transcoder](#) or [Edit a transcoder's settings, outputs, or targets](#).

- The **Properties** tab shows any advanced properties that can be set for the stream target. Only Apple HLS stream targets have configurable properties. See [Edit an HLS stream target's properties](#).
- **Geo-blocking** and **Authorization** tabs appear for Wowza CDN stream targets. They let you apply geo-blocking and token authorization, respectively. See [Configure geo-blocking for a Wowza CDN target](#) and [Configure token authorization for a Wowza CDN target](#).

## Edit a target's setup

1. Click **Advanced** on the menu bar, and then click **Stream Targets**.
2. Select a target in the **Stream Targets** panel, and then click **Edit**.
3. On the **Setup** tab, click **Edit**.
4. Depending on the type of target you selected, do the following:
  - Wowza CDN – HDS/HLS target – Change the **Target Name** as desired.
  - Wowza CDN – HLS – Change the **Target Name** as desired.
  - Custom stream target – Change the **Target Name**, **Provider**, **Primary URL**, **Backup URL**, or other options as desired.
  - Facebook Live stream target – Change the **Target Name**, **Title**, **Description**, or **Privacy** option as desired.
5. Click **Save**.

## Edit an HLS stream target's properties

Wowza Streaming Cloud provides advanced properties that you can use to customize and optimize Apple HLS stream targets. The properties can be set for Wowza CDN HLS stream targets and for custom stream targets whose **Provider** is **Akamai HLS Push**. There aren't any advanced properties for Adobe HDS, Adobe HDS / Apple HLS, or RTMP stream targets.

1. Click **Advanced** on the menu bar, and then click **Stream Targets**.
2. Select an Apple HLS stream target in the **Stream Targets** panel.
3. Click the **Properties** tab and then click **Edit**.
4. Select **Enabled** for any property and then specify the value you want to use for it.
  - **HLS segment duration** – Reduces the duration of the time-based audio and video chunks that Wowza Streaming Cloud delivers to the target. The HLS segment duration can be **2, 4, 6, 8, or 10** seconds. The default is **10** seconds. A lower (shorter) duration can reduce latency but may affect playback on some older devices.

### Caution

For most HLS stream targets, the segment duration doesn't need to be enabled or changed. Edit it *only* if viewers experience unacceptably long latency.

- **Send stream to target over SSL** – Determines whether Wowza Streaming Cloud sends the stream from the transcoder to the target by using SSL (HTTPS). By default, **Send stream to target over SSL** is **False** and the stream is sent over HTTP.
  - **Relative playlists** – Determines whether a stream's playlist contains relative or absolute paths. Relative paths allow the viewer to play the stream over HTTP or HTTPS, whichever way their browser connects to the stream target. The default, **True**, means that relative playlists are enabled. Otherwise, the viewer's playback protocol (HTTP or HTTPS) must correspond with the target's specified playback protocol in order to watch the stream.
5. Click **Save**.

## Configure geo-blocking for a Wowza CDN target

Wowza Streaming Cloud allows you to restrict where Wowza CDN targets can be accessed so that you can control where your stream can be watched. By default, geo-blocking is disabled — your stream can be viewed anywhere and everywhere. When you add a Wowza CDN target, Wowza Streaming Cloud automatically creates a **Geo-blocking** tab of the target's detail page where you can see and configure geo-blocking settings.

1. Click **Advanced** on the menu bar, and then click **Stream Targets**.
2. In the **Stream Targets** panel, select a Wowza CDN target.
3. Click the **Geo-blocking** tab and then click **Edit**.
4. Specify the type of geo-blocking you'd like to enable:
  - **Allow streaming only to the following locations** – Permits streaming only at specified locations.
  - **Do not allow streaming to the following locations** – Prohibits streaming at specified locations.
5. Specify affected **Locations**:
  - Click a location in the left list box to select it, and then click the right-pointing arrow to add it to the list of affected locations on the right.
  - Click a location in the right list box to select it, and then click the left-pointing arrow to remove it from the list of affected locations.
6. (Optional) To allow streaming at IP addresses even if they're within a geo-blocked location, enter one or more IP addresses in the **Geo-blocking Override Whitelist** field. Separate addresses using commas; don't include any spaces. The **Geo-blocking Override Whitelist** field supports Classless Inter-Domain Routing (CIDR) notation for defining subnet masks.
7. Click **Save**.

### Note

You can block or whitelist a total of 30 locations and IP addresses, in any combination.

## Configure token authorization for a Wowza CDN target

Wowza Streaming Cloud can secure Wowza CDN targets with *token authorization*. Token authorization protects streams by ensuring that they are accessed only by viewers who have the token. It prevents playback URLs from being shared by unauthorized links or player hijacking attacks.

Token authorization is disabled by default. To use it, enable it and create a trusted shared secret, sometimes called a secret key or a password, to share with Wowza Streaming Cloud. Then, generate temporary query parameters to test the authorization.

1. Click **Advanced** on the menu bar, and then click **Stream Targets**.
2. In the **Stream Targets** panel, select a Wowza CDN target.
3. Click the **Authorization** tab of the target's detail page and then click **Edit**.
4. Select **Enabled**.
5. Enter a **Trusted Shared Secret** or click **Generate Random Password**.

Trusted shared secrets must be composed of hexadecimal characters (the digits 0 through 9 and/or the letters *a* through *f*). The length of the secret must be an even number of characters between 2 and 32.

6. Click **Save**.

After authorization is enabled, generate sample query parameters to test it.

7. On the **Authorization** tab of the stream target detail page, click **Generate Query Parameters**.

Wowza Streaming Cloud generates a string of parameters that temporarily grant access to the protected stream target's playback URLs. The parameters are active for 10 minutes.

## Copy a custom target

1. Click **Advanced** on the menu bar, and then click **Stream Targets**.
2. Select a custom target in the **Stream Targets** panel.
3. Click **Copy**, and then click **OK** in the confirmation dialog.

## Delete a target

You can only delete a target that is not associated with a transcoder or a live stream.

1. Click **Advanced** on the menu bar, and then click **Stream Targets**.
2. Select a target in the **Stream Targets** panel.
3. Click **Delete Target**, and then click **OK** in the confirmation dialog.

## Scheduling live streams and transcoders

Schedules allow you to automatically start or stop a live stream or transcoder at a predetermined date and time. Using schedules helps speed your production workflow. For example, you can use a schedule to automatically stop a live stream that you know ends at a specific time, so you don't accidentally leave it running. Another time a schedule might be useful is to automatically start a daily live stream.

You can configure a schedule to start and/or stop a live stream or transcoder just once, or you can configure it to repeat the behavior on a regular basis.

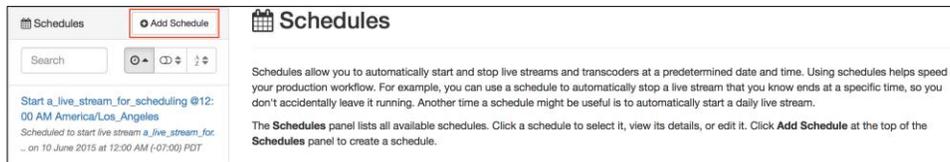
### Notes

- When you use a schedule to start a live stream or transcoder, the transcoder's **Idle Timeout** feature is disabled. The started live stream or transcoder will continue to run until you stop it in Wowza Streaming Cloud either manually or by using a stop schedule.
- You can't schedule multi-bitrate streams that are received from Wowza Streaming Engine and are sent directly to Wowza Streaming Cloud targets for delivery. Multi-bitrate (transcoded) streams must be started at the source, Wowza Streaming Engine.

## Add a schedule

1. Do one of the following:

- Click **Live Streams** on the menu bar, click **Schedules** for any live stream in the **Live Streams** panel, and then click **Add Schedule**.
- Click **Advanced** on the menu bar and then click **Transcoders**. Click **Schedules** for any transcoder in the **Transcoders** panel, and then click **Add Schedule**.
- Click **Advanced** on the menu bar, click **Schedules**, and then click **Add Schedule**.



2. On the **Add Schedule** page, enter schedule details.

## Add Schedule

\* = Required field

**Schedule Name**

**Schedule Status**

Enabled

**Schedule Recurrence\***

Run once  
 Repeat

**Start and Stop Times**

**Time Zone\***

America - Los Angeles (PST-08:00) ▾

Start this live stream:

**Live Stream Start Time**

23:00

⌚

**Live Stream Start Date**

2015-11-10

📅

0:00

2015-11-11

- **Schedule Name** – A short, descriptive identifier for the schedule that differentiates it from other schedules. The **Schedule Name** can't be longer than 255 characters. If you leave **Schedule Name** blank, Wowza Streaming Cloud assigns a name based on the name of the live stream or transcoder, the type of schedule you create (start or stop), and the time and time zone you select.
- **Live Stream/Transcoder** – The live stream or transcoder that you're scheduling. **Live Stream/Transcoder** is available only if you're adding the schedule from the **Schedules** page. If you selected a live stream or transcoder before you clicked **Add Schedule**, it's already associated with the schedule you're adding.

- **Schedule Status** – A schedule must be enabled in order to run, and **Enabled** is selected by default, so as soon as the schedule is created it will run at the specified date and time. If you don't select **Enabled**, you can enable it at a later time.
- **Schedule Recurrence** – A schedule can run once or it can repeat at a regular frequency. Select **Run once** to create a schedule that runs a live stream or transcoder one time only, at the specified **Start and Stop Times**. To create a schedule that recurs, select **Repeat** and then select the day or days of the week on which you want the schedule to run. Then, specify the time range that the schedule should run by selecting **From** and **To** dates.

**Note**

You can't change the **Recurrence** option after the schedule is created, but you can edit when a schedule repeats and runs.

- **Start and Stop Times** – A schedule can either start, stop, or start and stop a live stream or transcoder. Select whether you want the schedule to start and/or stop the live stream or transcoder, and then specify the exact start and stop dates and times (for run-once schedules) or specify just the start and stop times (for recurring schedules).

When choosing the start time, keep in mind that it takes a few minutes for Wowza Streaming Cloud to configure the live stream or transcoder. If your event begins at 9am, for example, it's a good idea to set the start time a little earlier, say, at 8:55am.

A schedule can't start and stop a live stream or transcoder at the same time. Start and stop times must be at least five minutes apart.

- **Time Zone** – The time zone that applies to the schedule. By default, your browser time zone is selected.

3. Click **Add**.

Wowza Streaming Cloud creates the schedule and displays the live stream, transcoder, or account **Schedules** page.

## View all schedules

You can see the high-level details of all of your schedules on the **Schedules** page.

1. Click **Advanced** on the menu bar, and then click **Schedules**.

<input type="checkbox"/> Live Stream/Transcoder	Schedule Name	Schedule Type	Schedule Recurrence	Transcoder Start Time	Status	Actions
<input type="checkbox"/> Politics lecture Live Stream	Start_stop Politics lecture @01:00 PM America/Los_Angeles By Anita	Start and stop	Tue, Thu From: 2015-11-10 To: 2015-12-18	Starts: 13:00 (-08:00) PST Stops: 15:00 (-08:00) PST	⊘ Disabled	Enable   Edit   Delete
<input type="checkbox"/> Ethics class Live Stream	Ethics class weekly By Anita	Start and stop	weekly From: 2015-11-11 To: 2015-12-18	Starts: 10:00 (-08:00) PST Stops: 11:45 (-08:00) PST	● Enabled	Disable   Edit   Delete
<input type="checkbox"/> Semifinal game Live Stream	Start Sunday By Anita	Start	Run once	Starts: 15 November 2015 04:00 PM PST (-08:00) PST Stops: -	● Enabled	Disable   Edit   Delete
<input type="checkbox"/> custom transcoder for opera	opera schedule By Anita	Start	Run once	Starts: 29 October 2015 02:10 PM PDT (-06:00) PST Stops: -	● Expired	Edit   Delete

The table provides a row for each schedule and shows the associated **Live Stream/Transcoder**, the **Schedule Name** (and who created it), the **Schedule Type**, **Schedule Recurrence**, **Transcoder Start Time** (and stop time and date), and **Status**.

The schedule's **Status** can be one of three states:

- **Enabled** – When enabled, a schedule runs at the specified start date and time. If the schedule repeats, it will recur every day until the **Schedule End Date** or until you disable it.
- **Disabled** – A disabled schedule is turned off and doesn't run.
- **Expired** – The schedule occurred in the past.

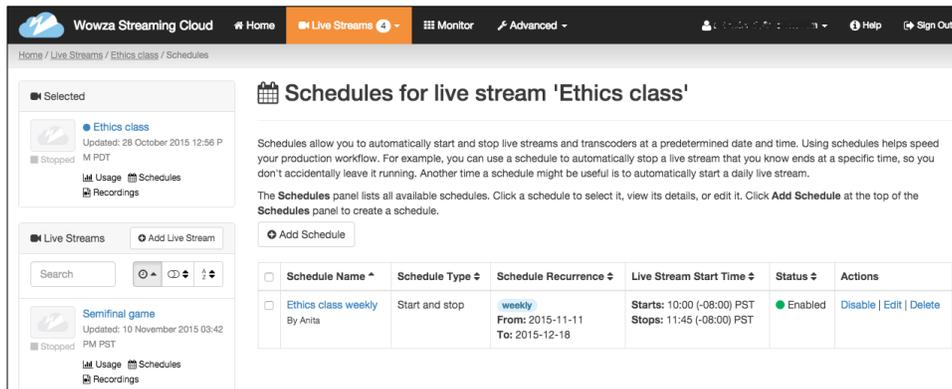
2. (Optional) Do any of the following:

- Click the double arrow  by any header to sort the table by that value.
- Click the down arrow  or the up arrow  next to a column header to change the sort direction.

## View all schedules for a stream

1. Do one of the following:

- Click **Live Streams** on the menu bar, and then click **Schedules** for any live stream in the **Live Streams** panel.
- Click **Advanced** on the menu bar, click **Transcoders**, and then click **Schedules** for any transcoder in the **Transcoders** panel.



2. (Optional) Click a **Schedule Name** to view that schedule's detail page.

## Enable, disable, or delete a schedule

You can opt to enable a schedule when you create it. You can also enable, disable, or delete a schedule at any time.

1. Do one of the following:
  - Click **Live Streams** on the menu bar, and then click **Schedules** for any live stream in the **Live Streams** panel.
  - Click **Advanced** on the menu bar and then click **Transcoders**. Click **Schedules** for any transcoder in the **Transcoders** panel.
  - Click **Advanced** on the menu bar, click **Schedules**.
2. In the **Actions** column for any schedule, click any of the following:
  - **Enable** – Instructs Wowza Streaming Cloud to execute the schedule at the specified date and time.
  - **Disable** – Puts the schedule in a non-operating state. A disabled schedule doesn't run.
  - **Delete** – Removes the schedule from Wowza Streaming Cloud.

### Tip

To delete all schedules at once, select the box to the left of the **Live Stream/Transcoder** or **Schedule Name** header and then click **Deleted Selected** in the **Actions** column of any selected schedule. Or, individually select multiple schedules using the check boxes in the left column of the table, and then delete multiple, assorted schedules at once.

3. When prompted to confirm that you want to enable, disable, or delete the schedule, click **OK**.

The **Status** column updates to reflect the change.

## View a schedule's details

- Do one of the following:
  - Click **Live Streams** on the menu bar, and then click **Schedules** for any live stream in the **Live Streams** panel.
  - Click **Advanced** on the menu bar and then click **Transcoders**. Click **Schedules** for any transcoder in the **Transcoders** panel.
  - Click **Advanced** on the menu bar, and then click **Schedules**.
- Click a **Schedule Name** in the table in the middle of the page.

The name of scheduled item appears under **Live Stream/Transcoder**. Other details displayed include **Schedule Status**, **Schedule Recurrence**, and **Start and Stop Times**. If the schedule occurred in the past, it's identified as **Expired**.

A **Schedule History** table appears if the schedule has been executed at least once. The table shows when the schedule ran and whether or not it ran successfully.

### Daily Sunset - Stop

🗑️ Delete Schedule

[✎ Edit](#)
Hide Help >

**Live Stream/Transcoder**  
lan-RTMP-Pull-Street (Live Stream)

**Enabled**  
Yes

**Expired**  
Yes

**Schedule Type**  
Stop

**Schedule Recurrence**  
Daily  
Schedule Runs From: 2015-03-30  
Schedule Runs To: 2015-04-04

**Time Zone**  
US - Mountain (MST-07:00)

**Live Stream Start Time**  
14:50

**Live Stream Stop Time**  
08:50

**Schedule Details**

This schedule applies to the listed **Live Stream/Transcoder**. You can see whether the schedule is configured to start, stop, or start and stop the live stream or transcoder, when the schedule is configured to run, whether and when the schedule recurs, and whether the schedule is enabled. If the schedule occurred in the past, **Expired** shows **Yes**. The **Schedule History** table shows when the schedule ran and whether or not it ran successfully.

Click **Edit** to change the **Live Stream/Transcoder**, **Schedule Type**, and other settings for this schedule.

**Schedule History**

Executed At ▼	Status ↕	Note ↕
10 November 2015 07:50 AM MST	Success	Stopped Transcoder
09 November 2015 01:50 AM MST	Success	-
08 November 2015 01:50 AM MST	Success	-

## Edit a schedule

1. Do one of the following:
  - Click **Live Streams** on the menu bar, and then click **Schedules** for any live stream in the **Live Streams** panel.
  - Click **Advanced** on the menu bar and then click **Transcoders**. Click **Schedules** for any transcoder in the **Transcoders** panel.
  - Click **Advanced** on the menu bar, and then click **Schedules**.
2. Click **Edit** in the **Actions** column of the schedule you want to change.
3. Change the **Schedule Name**, **Live Stream/Transcoder**, **Schedule Status**, **Repeat** options (for recurring schedules), and **Start and Stop Times**.
4. Click **Save**.



## Recording streams

### About recordings

The Wowza Streaming Cloud service can create MP4 recordings of your live streams and transcoded output. Recordings can be downloaded and saved locally. They're based on the highest-bitrate output rendition that Wowza Streaming Cloud generates from your video source.

Recordings capture up to eight hours of content. If a live stream or transcoder runs for longer than eight hours, the most recent eight hours are recorded. To record more than eight hours of a single broadcast, stop the live stream or transcoder and start it again to create multiple recordings.

Wowza Streaming Cloud saves recordings in active accounts until you delete them. Recorded content stored in Wowza Streaming Cloud generates additional costs. Billing is based on your *peak recording storage*, which is the greatest amount of recorded content stored in a given month. To help you stay apprised of costs, you can check your peak recording storage at any time in Wowza Streaming Cloud.

### Notes

- You can't record 24x7 streams.
- Wowza Streaming Cloud deletes recordings 90 days after the account is suspended or terminated.

## Create a recording

You select the option to record the live stream or transcoder when you set it up.

- Do one of the following:
  - Click **Live Streams** on the menu bar, and then click **Add Live Stream**. On the **Add Live Stream: Live Stream Setup** page, select **Yes, record this live stream**.
  - Click **Advanced** on the menu bar, click **Transcoders**, and then click **Add Transcoder**. On the **Add Transcoder: Transcoder Setup** page, select **Yes, record this transcoder**.
- Complete the steps to finish adding the live stream or transcoder. For more information, see [Add a live stream](#) or [Add a transcoder](#).
- To start recording, start the live stream or transcoder.

The recording starts and ends when you start and stop the live stream or transcoder. Resetting a live stream or transcoder does *not* stop a recording.

## View all recordings

You can see high-level details of all recordings in your account on the **Recordings** page.

- Click **Advanced** on the menu bar, and then click **Recordings**.

<input type="checkbox"/> Live Stream / Transcoder ↕	Time ▼	File Size ↕	Status ↕	Actions
<input type="checkbox"/> QACHan July 1 IP Camera Live Stream	Started: 01 July 2015 03:47 PM MDT Length: 00h 31m 00s	27.16 MB	● Completed	<a href="#">Download</a>   <a href="#">Delete</a>
<input type="checkbox"/> QACHan July 1 IP Camera Live Stream	Started: 01 July 2015 10:38 AM MDT Length: 04h 52m 09s	255.95 MB	● Completed	<a href="#">Download</a>   <a href="#">Delete</a>
<input type="checkbox"/> lan-RTMP-Pull-Street Live Stream	Started: 22 June 2015 03:16 PM MDT Length: 00h 02m 06s	35.68 MB	● Completed	<a href="#">Download</a>   <a href="#">Delete</a>

The table displays a row for each recording and shows the name of the **Live Stream/Transcoder** being recorded, the **Time** it was recorded and the **Length**, or duration, of the recording, the **File Size** of the recorded stream, and the **Status** of the recording.

A recording's **Status** can be any of the following:

- **Uploading** – Wowza Streaming Cloud is receiving the stream for recording.
- **Converting** – Wowza Streaming Cloud is preparing the MP4 file.
- **Removing** – Wowza Streaming Cloud is deleting the MP4 file from storage.
- **Completed** – The MP4 recording is ready to be downloaded.
- **Failed** – Wowza Streaming Cloud was unable to create a recording. If a recording fails, click **Show details** in the **Time** column to see the reason.

## View all recordings for a stream

If you start and stop a live stream or transcoder, or if your broadcast is longer than eight hours, Wowza Streaming Cloud creates multiple recordings of the stream.

- Do one of the following:
  - Click **Live Streams** on the menu bar, and then click **Recordings** for any live stream in the **Live Streams** panel.
  - Click **Advanced** on the menu bar, click **Transcoders**, and then click **Recordings** for any transcoder in the **Transcoders** panel.

 **Recordings for live stream 'Ian-RTMP-Pull-Street'**

Wowza Streaming Cloud can create MP4 recordings of your streamed output, which you can download and archive locally. You can select the option to record the live stream when you set it up. The recordings for this live stream appear below.

Recordings capture up to 8 hours of content; if a live stream runs for longer than 8 hours, the most recent 8 hours are stored. To record more than 8 hours of a single broadcast, stop the stream and start it again to create multiple recordings.

Wowza Streaming Cloud saves recordings until you delete them. Recorded content stored in Wowza Streaming Cloud generates additional costs. Billing is based on your *peak recording storage*, which is the greatest amount of recorded content stored in a given month.

<input type="checkbox"/> Time ▾	File Size ↕	Status ↕	Actions
<input type="checkbox"/> <b>Started:</b> 22 June 2015 03:16 PM MDT <b>Length:</b> 00h 02m 06s	35.68 MB	● Completed	<a href="#">Download</a>   <a href="#">Delete</a>
<input type="checkbox"/> <b>Started:</b> 11 June 2015 11:25 AM MDT <b>Length:</b> 00h 00m 55s	8.51 MB	● Completed	<a href="#">Download</a>   <a href="#">Delete</a>
<input type="checkbox"/> <b>Started:</b> 10 June 2015 04:49 PM MDT <b>Length:</b> 00h 24m 58s	416.46 MB	● Completed	<a href="#">Download</a>   <a href="#">Delete</a>

## View recording storage

*Peak recording storage* is the greatest amount of recorded content stored in Wowza Streaming Cloud for an account in a particular time frame. If you check peak recording storage for the current billing period, Wowza Streaming Cloud shows you the peak amount to date. However, this isn't necessarily the amount you'll be billed for; if you generate additional storage before the close of the billing cycle, your peak recording storage will increase.

If you record a lot of broadcasts and are concerned about costs, check your peak recording storage frequently. Peak recording storage data is available and updated as soon as Wowza Streaming Cloud processes a recording.

- To view peak recording storage, do any of the following:
  - Look at the **Peak Recording Storage** entry in the **Current Usage** panel on the Wowza Streaming Cloud **Home** page.
  - Click **Advanced** on the menu bar, and then click **Recordings**. Peak recording storage for the current billing period appears in the **Storage** panel in the upper-right corner of the page.
  - Look at the **Storage** tab of the account usage page. You can view or generate peak recording storage for any selected timeframe. See [View usage for an account](#) for more information.
- To view other types recording storage:
  - Navigate to the **Recordings** page for any live stream or transcoder. The **Total** storage being used for the live stream or transcoder at the current moment appears at the bottom of the table.
  - Click **Advanced** on the menu bar and then click **Recordings**. The **Total** storage used for all recordings in your account at the current moment appears at the bottom of the table. If you've deleted recordings, the **Total** is lower than the peak recording storage that appears in the **Storage** panel in the upper-right corner of the page.

## Download or delete a recording

1. Do one of the following:
  - Click **Advanced** on the menu bar, and then click **Recordings**.
  - Click **Live Streams** on the menu bar, and then click **Recordings** for any live stream in the **Live Streams** panel.
  - Click **Advanced** on the menu bar, click **Transcoders**, and then click **Recordings** for any transcoder in the **Transcoders** panel.
2. In the **Actions** column for any recording, click one of the following:
  - **Download** – Downloads a copy of the recording to your local computer.
  - **Delete** – Removes the recording from Wowza Streaming Cloud.

### Tip

To delete all recordings at once, select the box to the left of the **Live Stream/Transcoder** or **Time** header and then click **Deleted Selected** in the **Actions** column of any selected recording. Or, individually select multiple recordings using the check boxes in the left column of the table, and then delete multiple, assorted recordings at once.

## Monitoring stream health

### Monitor an active stream

The Wowza Streaming Cloud service monitors resources continually. When a live stream or transcoder is active, you can view information about the source stream, the transcoder, and delivery.

- Do one of the following:
  - On the **Live Streams** page, click any started  stream.
  - On the **Transcoders** page, click any started  transcoder.
- Look at the **Video Snapshot** area of the **Overview** tab of the stream or transcoder detail page to see the source stream, transcoder, and delivery details.

**Video Snapshot**



<b>S</b> Inbound: Connected	Yes
<b>S</b> Inbound Bitrate: Actual	14.2 Kbps
<b>T</b> Outbound Bitrate: Actual	56.6 Kbps
<b>T</b> Outbound Bitrate: Configured	1360.0 Kbps
<b>T</b> CPU Usage	7 %
<b>T</b> Frame Size	640x480
<b>T</b> Frame Rate	24 FPS
<b>T</b> Keyframe Interval	48 GOP
<b>D</b> Total Unique Viewers	10

▶ Started 28 March 2016 02:32 PM PDT

**S** Source Stream **T** Transcoder **D** Delivery

- S** Source Stream
  - Inbound: Connected** – Yes indicates that the video source or encoder is connected to Wowza Streaming Cloud.
  - Inbound Bitrate: Actual** – The rate of the stream traveling from the encoder to Wowza Streaming Cloud, in kilobits per second (Kbps).

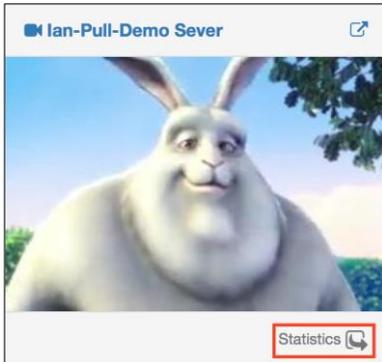
- **T** Transcoder
  - **Outbound Bitrate: Actual** – The total actual bitrate of all outbound video renditions, in kilobits per second (Kbps).
  - **Outbound Bitrate: Configured** – The total configured bitrate of all outbound video streams, in kilobits per second (Kbps).
  - **CPU Usage** – The percentage of available CPU power on the virtual host being used by the transcoder.
  - **GPU Encoder Usage** – The percentage of available GPU encoding power on the virtual host being used by the transcoder. Appears only for active 4K streams.
  - **GPU Decoder Usage** – The percentage of available GPU decoding power on the virtual host being used by the transcoder. Appears only for active 4K streams.
  - **Frame Size** – The configured frame size of the source video, in pixels. A warning appears if the configured frame size differs from the actual frame size being received from the source by Wowza Streaming Cloud.
  - **Frame Rate** – The frame rate of the video, in frames per second, at the transcoder. A warning appears if the frame rate is too low, which might indicate a problem at the stream source, or if it's too high, which might overload the transcoder's CPU.
  - **Keyframe Interval** – The number of video frames compressed in a group of pictures (GOP) between keyframes at the transcoder. A warning appears if the keyframe interval varies from the recommended rate of being equal to or twice the frame rate.
  
- **D** Delivery
  - **Total Unique Viewers** – The total number of times the live stream or transcoder has been viewed. A single unique view is one IP address receiving at least one chunk of the stream on any player or device in a 24-hour period. A chunk is a segment of video that 10 seconds or shorter.

### Notes

- All times appear in the user's local time.
- The snapshot updates every five seconds.
- Source stream and transcoder information refresh every 10 seconds.
- Passthrough transcoders don't show an **Outbound Bitrate: Configured**.
- **Total Unique Viewers** begins to update approximately 2 hours after the stream starts and then it updates approximately hourly. Viewer data may take up to 48 hours to finalize after the stream ends.

## Monitor all active streams

- Click **Monitor** on the menu bar to view snapshots of all started  streams.
- Click **Statistics** in the lower-right corner of the snapshot tile to view source, transcoder, and delivery details for the stream.



- Click **Snapshot** in the lower-right corner of the statistics tile to see frame snapshots for the stream.

Ian-Pull-Demo Sever	
<b>S</b> Inbound: Connected	Yes
<b>S</b> Inbound Bitrate: Actual	17.9 Kbps
<b>T</b> Outbound Bitrate: Actual	56.1 Kbps
<b>T</b> Outbound Bitrate: Configured	1360.0 Kbps
<b>T</b> CPU Usage	17 %
<b>T</b> Frame Size	640x480
<b>T</b> Frame Rate	24 FPS
<b>T</b> Keyframe Interval	48 GOP
<b>D</b> Total Unique Viewers	10

- Click the go-to icon  in the upper-right corner of the tile to go to the hosted page for the stream, if there is one.
- Click the live stream name in the upper-left of the tile to go to the stream's detail page.

## Tracking usage, viewer data, and activity

The Wowza Streaming Cloud service lets you track your usage and see charges as they accrue. The Wowza Streaming Cloud manager provides multiple ways to stay on top of how much stream processing time and bandwidth you've accrued, as well as to stay aware how much content left Wowza Streaming Cloud for a stream target (egress). You can see:

- A snapshot of how much stream processing time, bandwidth, and storage has accrued for the account in the current billing period.
- A detailed breakdown of how much stream processing time and bandwidth have accrued for any individual stream or transcoder, in any time period.
- Details of stream processing time, bandwidth usage, and storage for the account, in any time period.
- Information on where and how long viewers watched your streams.

Keep in mind the following important caveats about usage and viewer data:

- Bandwidth data is subject to a delay of up to 3 hours and then updates hourly. Stream processing times and egress data update in or near real-time. Billing data updates approximately every 12 hours. As a result, usage and billing data may differ.
- If you try to generate a bandwidth report and receive the message, "Not enough data is available for the time period you selected," it could be due to the three-hour delay. Try again in a few hours.

- Viewer data is available about 2 hours after a transcoder stops running. Then, it updates approximately hourly and it may take up to 48 hours to finalize. Viewer data isn't available for streams before October 5, 2015.

In addition, user logs provide an audit trail that lets you see who has done what. Logs can also be helpful for troubleshooting problems that may arise.

## View a snapshot of current usage

- Click the **Home** tab and look at the **Current Usage** panel in the upper-right corner of the page.

Current Usage*	
Bandwidth	96.08 GB
Transcoded Stream Processing Time	2533.30 hours
Passthrough Stream Processing Time	37.70 hours
Peak Recording Storage	22.37 GB

[View My Account Usage](#)  
[View My Invoices](#)  
[View Pricing](#)

\* Current usage covers the current billing period.  
 Bandwidth usage is subject to a delay of up to 3 hours.

**Bandwidth** includes the amount of content that Wowza Streaming Cloud processed through CDN stream sources and stream targets as well as egress for 24x7 live streams and passthrough transcoders. Egress usage updates in real time but CDN usage data is subject to a delay of up to three hours, and then it updates hourly.

**Transcoded Stream Processing Time** shows the number of processing hours used by all adaptive bitrate live streams and custom transcoders in your account in the current billing period. Transcoded stream processing time updates in real time.

**Passthrough Stream Processing Time** shows the number of processing hours used by all passthrough transcoders in your account in the current billing period. Passthrough stream processing time updates in real time.

**Peak Recording Storage** shows the peak amount of recorded content stored in Wowza Streaming Cloud to date in the current billing period. Storage data is available and updated as soon as Wowza Streaming Cloud finishes processing a recording.

## View usage for a stream or transcoder

You can view stream processing and bandwidth data for any stream or transcoder for any time period you specify.

1. Do one of the following:
  - On the **Live Streams**, page, click **Usage** for any stream in the **Live Streams** panel.
  - On the **Transcoders** page, click **Usage** for any transcoder in the **Transcoders** panel.
2. Select a predefined date/time range or specify a range by using the **From** and **To** fields.

The screenshot shows a web interface titled "Usage of 'RTMP-Pull-Hawaii'". Below the title, there are three input fields for date/time selection: "Select or enter date/time range:" with a dropdown menu showing "last 7 days", "From:" with a text input "2015-01-15 04:03" and a calendar icon, and "To:" with a text input "2015-01-22 04:03" and a calendar icon. To the right of these fields is an orange "Show" button.

3. Click **Show**.
4. Click the tab for the type of usage you want to see:
  - **Stream Processing** – Displays a table with a row for each time the stream or transcoder used the Wowza Streaming Cloud transcoder during the selected timeframe. For each session, you can see when the stream started and ended, in your browser’s time zone. If the stream is active, the **End Time** shows **Still Running**. **Hours Used** is the total amount of time that the stream used the transcoder, from **Start Time** to **End Time**.

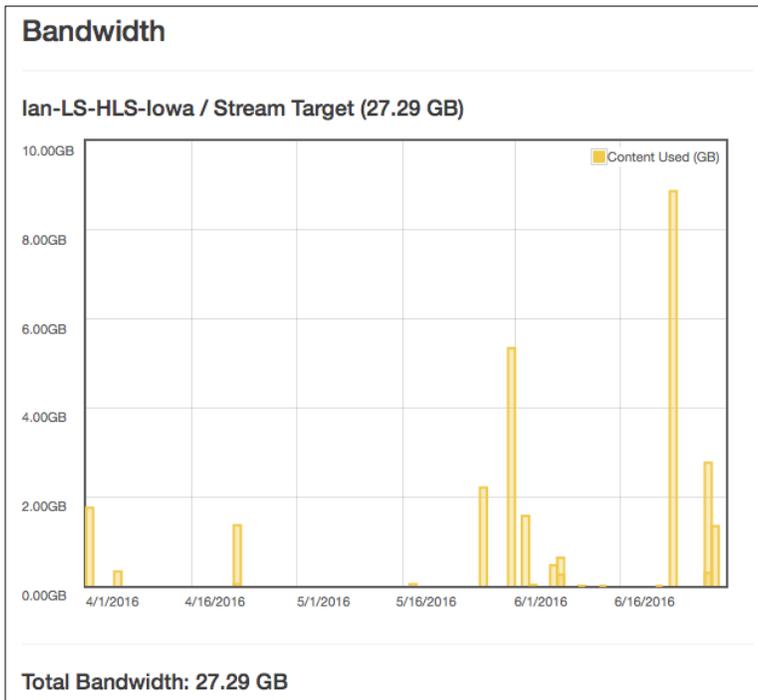
Total stream processing time for the time frame appears under the table.

### Stream Processing Time

Start Time ▾	End Time ⇅	Hours Used ⇅
29 September 2015 04:13 PM PDT by Ian	29 September 2015 04:48 PM PDT by Customer Support	35m 10s
28 September 2015 10:14 AM PDT by Ian	28 September 2015 11:05 AM PDT by Ian	50m 52s
26 September 2015 07:02 AM PDT by Ian	26 September 2015 07:30 AM PDT by Ian	27m 53s
24 September 2015 03:04 PM PDT by Ian	24 September 2015 07:18 PM PDT by Ian	4h 13m 57s

**Total Stream Processing Time: 6h 07m 52s**

- Bandwidth** – If the live stream or transcoder used stream sources and/or stream targets, graphs show how much content was received by each source and sent to each target. Time increments in the graphs vary depending on the selected time frame. Totals appear next to the graph titles. Total bandwidth for all sources and targets appears below the graphs.



The **Egress** table shows how much traffic, if any, the stream or transcoder sent to Wowza CDN and custom stream targets during the time period.

Egress		
Start Time ▾	End Time ⇅	Amount Used ⇅
15 May 2015 08:16 AM PDT	15 May 2015 08:20 AM PDT	66.74 MB
09 May 2015 08:59 PM PDT	09 May 2015 09:01 PM PDT	33.53 MB
09 May 2015 08:49 PM PDT	09 May 2015 08:56 PM PDT	108.97 MB
09 May 2015 08:47 PM PDT	09 May 2015 08:47 PM PDT	8.26 MB
<b>Total Egress: 0.22 GB</b>		

5. (Optional) Do any of the following:

- Click the double arrow  by any header to sort the table by that value.
- Click the down arrow  or the up arrow  of the selected header to change the sort direction.

## View usage for a stream target

You can view bandwidth details for any stream target for any time period you specify.

1. Click **Advanced** on the menu bar and then click **Stream Targets**.
2. Click **Usage** for any target in the **Stream Targets** panel.
3. Select a predefined date/time range or specify a range by using the **From** and **To** fields.
4. Click **Show**.

The graph on the **Bandwidth** tab shows how much content the target processed during the selected time frame. The graph's units adjust automatically depending on the date/time range you've specified. The total amount appears next to the graph title.

## View usage for an account

You can view stream processing, bandwidth, and storage for your account, for any time period you specify.

1. Click your email address on the menu bar, and then click **Usage**.
2. Select a predefined date/time range or specify a range by using the **From** and **To** fields.
3. Click **Show**.
4. Click the tab for the type of usage you want to see:
  - **Stream Processing** – Displays a table with a row for every live stream and transcoder that was processed by Wowza Streaming Cloud during the selected time frame. Depending on the type of subscription you have, you can see transcoded and/or passthrough stream processing time tables. Each table shows the **Billing Mode** (pay as you go or 24x7), how long each stream or transcoder was processed (**Hours Used**), and amount of billed processing time (**Hours Billed**) for each stream or transcoder. The total number of **Hours Used** for all streams or transcoders in the time frame appears at the bottom of the table.

Transcoded Stream Processing Time			
Live Stream/Transcoder ^	Billing Mode ↕	Hours Used ↕	Hours Billed ↕
a_live_stream_for_scheduling  Deleted	Pay as you go	20m 29s	20m 29s
lan_HLS-Push-Test	Pay as you go	3h 41m 40s	3h 41m 40s
lan-Pull-Demo Sever	Pay as you go	26m 12s	26m 12s
<b>Total:</b>		<b>4h 28m 21s</b>	<b>4h 28m 21s</b>

Passthrough Stream Processing Time			
Live Stream/Transcoder ^	Billing Mode ↕	Hours Used ↕	Hours Billed ↕
BillyQACHan Aug 3 Passthrough	Pay as you go	5m 23s	5m 23s
lan-payg-passthrough	Pay as you go	6h 45m 04s	6h 45m 04s
lan-payg-passthrough2	Pay as you go	1h 09m 52s	1h 09m 52s
Jocko-24x7:Passthrough=n1-standard-2	24x7	2m 21s	--
Jocko-PayG:Passthrough=m3.medium	Pay as you go	20m 35s	20m 35s
<b>Total:</b>		<b>8h 23m 15s</b>	<b>8h 20m 54s</b>

- **Bandwidth** – Shows how much CDN usage and egress that live streams and transcoders have accrued in your account during the selected time frame.

If any streams or transcoders used stream sources and/or stream targets, the **CDN** tables show the amount of traffic generated (**Amount Used**) and the amount of traffic billed (**Amount Billed**) for each source or target. Total CDN usage amounts for the time frame appear at the bottom of each table.

The **Egress** tables show how much traffic left Wowza Streaming Cloud for Wowza CDN and custom stream targets for every 24x7 and/or live event stream and transcoder in the account, depending on your subscription plan, during the selected time frame.

You can see how much egress was generated (**Amount Used**) and billed (**Amount Billed**) for each stream and transcoder during the selected time frame. Total **Amount Used** and **Amount Billed** for the time frame appear at the bottom of each table.

CDN			
<b>Wowza CDN Stream Targets</b>			
Wowza CDN Stream Targets ^	Amount Used ⇅	Amount Billed ⇅	
lan-Golden Cam / Stream Target	11.15 MB	11.15 MB	
lan-HTTP / Stream Target	2.95 KB	2.95 KB	
lan-LS-HLS-Iowa / Stream Target	10.67 KB	10.67 KB	
Osprey E2E 7/21 / Stream Target	1.53 KB	1.53 KB	
Unknown Stream: 4bbf64	39.22 MB	39.22 MB	
<b>Total:</b>	<b>0.05 GB</b>	<b>0.05 GB</b>	
<b>Stream Sources</b>			
Stream Sources ^	Amount Used ⇅	Amount Billed ⇅	
Osprey E2E 7/21 / Stream Source	99.24 MB	99.24 MB	
<b>Total:</b>	<b>0.10 GB</b>	<b>0.10 GB</b>	
<b>24x7 Egress</b>			
Live Stream/Transcoder Egress ^	Mode/Type ⇅	Amount Used ⇅	Amount Billed ⇅
lan-HTTP	24x7/Adaptive bitrate	23.65 GB	15.52 GB
<b>Total:</b>		<b>23.65 GB</b>	<b>15.52 GB</b>
<b>Live Event Egress</b>			
Live Stream/Transcoder Egress ^	Mode/Type ⇅	Amount Used ⇅	Amount Billed ⇅
lan-Golden Cam	Pay as you go/Adaptive bitrate	251.11 GB	251.11 GB
lan-HTTPS	Pay as you go/Adaptive bitrate	35.61 MB	35.61 MB
Osprey E2E 7/21	Pay as you go/Adaptive bitrate	365.63 MB	365.63 MB
<b>Total:</b>		<b>251.51 GB</b>	<b>251.51 GB</b>

- **Storage** – Shows the peak amount of recording storage your account has used in the selected time frame. If the time frame is in the past, **Peak Recording Storage** shows the amount of storage that was used and billed. If the time frame includes the current billing period, **Peak Recording Storage** shows the greatest amount of content stored in Wowza Streaming Cloud to date in the billing period. It isn't necessarily the amount you'll be charged, since peak recording storage isn't calculated until the billing period closes.

Storage	
Peak Recording Storage	14.1 GB

5. (Optional) Do any of the following:

- Click the double arrow  by any header to sort the table by that value.
- Click the down arrow  or the up arrow  by the selected header to change the sort direction.
- Click any live stream or transcoder name to get usage details for that stream or transcoder during the same time range.
- Click any stream source or stream target to go to its detail page.

**Note**

You can't go to the detail page of a deleted stream, transcoder, source, or target.

## See viewer data for a stream

You can see details about how people watched your streams over Wowza CDN targets for any time period you specify.

1. Do one of the following:
  - On the **Live Streams**, page, click **Usage** for any stream in the **Live Streams** panel.
  - On the **Transcoders** page, click **Usage** for any transcoder in the **Transcoders** panel.
2. Click the **Viewer Data** tab.

3. Select a predefined date/time range or specify a range by using the **From** and **To** fields, and then click **Show**.

Wowza Streaming Cloud returns viewer data for each stream target used by the live stream or transcoder. The **Viewer Data for [live stream or transcoder name] / Stream Target** table displays:

- **Total Unique Viewers** – The total number of viewers, worldwide, who downloaded at least one chunk of the stream at the target. A unique viewer is a single IP address; if multiple users share the same IP address (NAT), they are counted once. A chunk is a segment of video that's 10 seconds or shorter.
- **% HLS** – The percentage of total viewers who watched the stream over the Apple HLS protocol at the target.
- **% HDS** – The percentage of total viewers who watched the stream over the Adobe HDS protocol at the target.
- **Total Viewing Time** – The total length of time that all viewers played the stream at the target. **Total Viewing Time** may be longer than the duration of the stream.
- **Avg Viewing Time** – The average length of time that viewers played the stream at the target.

The **Per Country** table breaks down viewer data at the target by country. You can see and sort by:

- **Country** – The country where the stream was viewed. The top 10 countries are listed. If the stream was watched in more than 10 countries, the remaining countries are grouped into **Other**.
- **Unique Viewers** – The number of viewers in that country who downloaded at least one chunk of the stream.
- **% Viewers** – The percentage of total viewers who watched the stream in that country.
- **% HLS** – The percentage of viewers in the country who watched the stream over Apple HLS.
- **% HDS** – The percentage of viewers in the country who watched the stream over Adobe HDS.
- **Total Viewing Time** – The total length of time that viewers in the country played the stream. **Total Viewing Time** may be longer than the duration of the streamed content.
- **Avg Viewing Time** – The average length of time that viewers in the country played the stream.

**Protocol and Rendition Statistics** data is available for Wowza CDN targets. The tables break down viewer data at the target by protocol. First, choose a country where the stream was viewed (or leave the **Select a Country** menu set for **All**). Then, look at the **Apple HLS** and **Adobe HDS** tables to see the total number of unique viewers and the total viewing time for each protocol in that location. For each protocol, you can also see and sort by:

- **Rendition** – The bitrate renditions that were viewed in the selected location.
- **Unique Viewers** – The number of viewers who downloaded at least one chunk of the rendition in the selected location.
- **Viewing Time** – The total length of time that viewers played the rendition in the selected location.
- **Avg Viewing Time** – The average length of time that viewers played the rendition in the selected location.
- **Percentage Viewing Time** – The percentage of total viewing time spent on the rendition in the selected location.

## See viewer data for a stream target

You can see details about how people played your streams at a Wowza CDN target for any time period you specify.

1. Click **Advanced** on the menu bar, and then click **Stream Targets**.
2. Click **Usage** for any Wowza CDN in the **Stream Targets** panel and then click the **Viewer Data** tab.
3. Select a predefined date/time range or specify a range by using the **From** and **To** fields.
4. Click **Show**.

Wowza Streaming Cloud returns viewer data all live streams and transcoders that delivered content to the stream target. If more than one stream was delivered to the target during the time period, viewer data for all streams is displayed cumulatively.

The **Viewer Data** table displays:

- **Total Unique Viewers** – The total number of viewers, worldwide, who downloaded at least one chunk of the stream at the target. A unique viewer is a single IP address; if multiple users share the same IP address, they are counted once. A chunk is a segment of video that's 10 seconds or shorter.
- **% HLS** – The percentage of total viewers who watched the stream over the Apple HLS protocol at the target.
- **% HDS** – The percentage of total viewers who watched the stream over the Adobe HDS protocol at the target.
- **Total Viewing Time** – The total length of time that all viewers played the stream at the target. **Total Viewing Time** may be longer than the duration of the stream.
- **Avg Viewing Time** – The average length of time that viewers played the stream at the target.

The **Per Country** table breaks down viewer data at the target by country. You can see and sort by:

- **Country** – The country where the stream was viewed. The top 10 countries are listed. If the stream was watched in more than 10 countries, the remaining countries are grouped into **Other**.
- **Unique Viewers** – The number of viewers in that country who downloaded at least one chunk of the stream.
- **% Viewers** – The percentage of total viewers who watched the stream in that country.
- **% HLS** – The percentage of viewers in the country who watched the stream over Apple HLS.
- **% HDS** – The percentage of viewers in the country who watched the stream over Adobe HDS.
- **Total Viewing Time** – The total length of time that viewers in the country played the stream. **Total Viewing Time** may be longer than the duration of the streamed content.
- **Avg Viewing Time** – The average length of time that viewers in the country played the stream.

The **Protocol and Rendition Statistics** tables break down viewer data at the target by protocol. First, choose a country where the stream was viewed (or leave the **Select a Country** menu set for **All**). Then, look at the **Apple HLS** and **Adobe HDS** tables to see the total number of unique viewers and the total viewing time for each protocol in that location. For each protocol, you can also see and sort by:

- **Rendition** – The bitrate renditions that were viewed in the selected location.
- **Unique Viewers** – The number of viewers who downloaded at least one chunk of the rendition in the selected location.
- **Viewing Time** – The total length of time that viewers played the rendition in the selected location.
- **Avg Viewing Time** – The average length of time that viewers played the rendition in the selected location.
- **Percentage Viewing Time** – The percentage of total viewing time spent on the rendition in the selected location.

## View user activity logs

Wowza Streaming Cloud tracks all activities performed in a subscription and provides detailed logs for you to use as needed, including assistance with troubleshooting problems that may arise. You can view logs for all activity, or search for activity based on specific criteria.

1. Click **Advanced** on the menu bar, and then click **Logs**.
2. Specify search criteria:
  - **User** – Select a name from the **User** pop-up menu, or select **All Users**.
  - **From** and **To** – Specify a date-time range by using the **From** and **To** fields.
  - **Search** – Enter a keyword to limit results to entries whose **Description** includes the search text.
  - **Show Info** – Select to view activity that completed successfully.
  - **Show Error** – Select to view activity that resulted in an error.
3. Click **Search**.

Wowza Streaming Cloud displays up to 500 results for the selected criteria. The **Logs** table shows a row for each activity recorded, detailing:

- **Time/Date** – When the activity occurred. By default, the table is sorted by most oldest to most recent activity, as indicated by the up arrow  in the header.
- **User** – The user who performed the action. The **User** can be an API request.
- **Description** – A description of the activity. Activities that resulted in an error appear in red text.
- **URL/Referrer/From IP** – Where the activity occurred, including:
  - **URL** – The web address on which the activity occurred.
  - **Ref** – The address of the page that was viewed preceding the **URL** page; API requests don't have referrers.
  - **From IP** – The IP address where the activity occurred.

4. Do any of the following:

- Click **Download Logs** to generate a tab-delimited text file of the logs. The generated file is named by the date/time stamp: `wowza_cloud_user_logs_yyyymmddhhmmss.log`, where *hhmmss* is hours, minutes, and seconds in UTC/GMT.
- Click **Reset** to restore default search parameters.
- Click a name in the **User** column to send an email to that individual.
- Click the double arrow  by any column header to sort the table by that value.
- Click the down arrow  or the up arrow  next to a column header to change the sort direction.

# Chapter 10

## Managing subscriptions

Every Wowza Streaming Cloud subscription has one owner and one workgroup. The owner manages the subscription. The workgroup can contain multiple users, also called *members*, who can access the service. All users—owners and members—can belong to multiple workgroups as part of different subscriptions.

Subscriptions and workgroups are managed in the Wowza portal.

### Switch between Wowza Streaming Cloud manager and Wowza portal

- In the Wowza Streaming Cloud web manager, do either of the following:
  - In the **Current Usage** panel on the **Home** page, click **View My Invoices**.
  - On the menu bar, click your email address and then click **My Account**.

The Wowza Streaming Cloud service opens your Wowza account portal page. Owners can see the **Wowza Streaming Cloud** tab.

- In the **Wowza Streaming Cloud** tab, click **cloud.wowza.com** to go to the Wowza Streaming Cloud manager.

## Manage workgroups

1. In the Wowza account portal, click the **Wowza Streaming Cloud** tab.
2. Do any of the following:
  - Look in the **Manage Wowza Streaming Cloud Workgroup** section to see your **Workgroup Name**.
  - In the **Manage Wowza Streaming Cloud Workgroup** section, click **Add** to give individuals access to this Wowza Streaming Cloud subscription.
  - In the **Manage Wowza Streaming Cloud Workgroup** section, click **Remove** to preclude a user's access to the Wowza Streaming Cloud subscription.
  - Look in the **My Wowza Streaming Cloud Workgroups** section to see which other Wowza Streaming Cloud workgroups you belong to.

## Switch between workgroups

If you belong to multiple workgroups, you can choose the workgroup you want to access when you sign in to Wowza Streaming Cloud, or change workgroups during a session in the manager.

- When you sign in to the Wowza Streaming Cloud manager, click to select the workgroup you want to access.
- At any time in the Wowza Streaming Cloud manager, click your email address on the menu bar, and then click **Switch Workgroup**.

## View account billing information

Subscription owners can access current and past billing information in the Wowza portal.

1. In the Wowza portal, click the **Invoices** tab.
2. Do any of the following:
  - View a list of all of your previous Wowza Streaming Cloud invoices.
  - Click an invoice number to open an Adobe PDF file of the invoice.
  - Click **View unpaid usage** to see pending, unpaid usage from the current billing cycle.

### Note

To view updated information in the **Unpaid Usage** table while an event is streaming live, sign out and then sign back in to your account.



## Additional help and support

- Most pages in the Wowza Streaming Cloud web manager include a **Help** panel on the right side of the page. Use the **Help** panel to get information about the options and settings that are displayed on the page. Click **Hide Help** to hide the panel or click **Show Help** to bring it into view.
- Click **Help** on the Wowza Streaming Cloud manager menu bar for links to a wide array of help and support resources, including:
  - [Getting started with Wowza Streaming Cloud](#)
  - [How to encode source video for Wowza Streaming Cloud](#)
  - [Wowza Streaming Cloud user forum](#)
- For technical support, [submit a ticket](#) to the Support team.